

Strengthening the competence of dietetics students on providing nutrition care for HIV patients:
Application of attribution theory

by

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B.Sc., Universitas Gadjah Mada, 2007
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AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

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Department of Food, Nutrition, Health, and Dietetics
College of Human Ecology

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Abstract

HIV and nutrition status are interrelated. Nutrition problems associated with HIV or its treatment occur in nearly all people living with HIV (PLHIV) and can be indicative of the stage and progression of infection. On the other hand, adequate nutrition ensures good nutrition status, immune function, improved treatment outcome, and quality of life. The growing problems of HIV and AIDS in Indonesia require health professionals, including dietitians, to mobilize for HIV care and control. However, studies have demonstrated health care workers to have prejudicial attitudes towards PLHIV, which may further jeopardize the quality of care.

The objective of this study was to implement the attribution theory to improve HIV-related knowledge and attitudes among dietetics students. It is hypothesized that given the opportunity to revisit the antecedent of their stigma, dietetic students might be able to improve their attitudes and emotional reactions to HIV.

Results from the cross-sectional study confirmed the attribution theory, showing that the stigmatizing attitudes were influenced by both personal values and environmental factors. The study also found that greater knowledge about HIV was associated with a better attitude toward PLHIV. This and the fact that universities differed in how they educated dietetic students about HIV, raise questions on the current dietetic curriculum in Indonesia and the teaching conduct in each dietetic school.

These notions were studied in the second study, using a qualitative approach to inquire lecturers and school administrators. Four major themes emerged from the analysis confirming that HIV discourse in dietetic schools in Indonesia is very limited since it is not mandatory in the curriculum, lecturers are reluctant to talk about HIV, and there is apparent restriction to work with the key population. The way the lecturers attribute HIV with blames of personal

responsibility and fear of contagion, heavily influence their teaching conduct. The intervention model with transformative learning supported the hypothesis that given the opportunity to reflect and re-question their judgment, students were able to improve their knowledge and reduce their stigmatizing attitudes.

Overall, these studies give a warning to policy makers in health and education sectors as well as the school administrators that dietetics students have negative attitudes towards PLHIV and this stigma is associated with lack of knowledge about HIV, hence the need to improve response from both sectors. This study also serves as a strong call to provide more opportunities to students to learn about HIV and to reach out to the patients and key population to instill better understanding and acceptance to HIV.

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Dedication

This dissertation is dedicated to my perfect fans: mother, father, grandmother, and sister.

‘After a hurricane comes a rainbow’ (Katy Perry)

May our road ahead be filled with more happiness and laughter

Chapter 1 - Introduction

Background of Study

Globally, an estimated of 35 million people lived with HIV, and around 1.5 million people died from AIDS-related causes (UNAIDS, 2015). In Indonesia, the incidence and mortality rate increased considerably by 48% and 127%, between 2005 and 2015 (UNAIDS, 2015; WHO Regional Office for South East Asia, 2015). This situation is exacerbated by the fact that health sector response is underperformed. WHO reported that only 24% of all estimated people living with HIV (PLHIV) were tested, 8% were on treatment, and 9% of HIV pregnant women received antiretroviral therapy (ART) to prevent perinatal transmission (WHO Regional Office for South East Asia, 2014, 2015).

HIV comprehensive knowledge is low among the general adult population in Indonesia. The 2012 survey found that less than 50% of married men and women knew the preventative measures of HIV transmission such as condom use. In addition, misconception on HIV is pervasive such as a prejudice that a healthy-looking person cannot have the virus or that HIV can be transmitted through mosquito bites or food sharing (Statistics Indonesia, National Population and Family Planning Board, MOH of Indonesia, & ICF International, 2013). Lack of adequate knowledge and stereotype seemed to generate deeper fear, anxiety, and prejudice towards PLHIV (Harapan et al., 2015; Statistics Indonesia, et al., 2013; Waluyo, Culbert, Levy, & Norr, 2015).

Acceptance of PLHIV in Indonesia is low in the community and so is among health providers (Merati, Supriyadi, & Yuliana, 2005; Paxton et al., 2005; Waluyo, et al., 2015). Previous studies reported widespread stigmatized attitude towards the patients by doctors,

nurses, and midwives (Liem & Adiyanti, 2013; Paxton, et al., 2005; Waluyo, et al., 2015). A study on HIV in health care settings in Aceh, Indonesia, found a high level of negative attitudes among health professionals, including dietitians. The stigma found in this study was classified as value-driven stigma, characterized as the blame and shame prejudice. With this attitude, HIV is regarded as a ‘disease of bad person’ and immoral; thus, how the patients contracted the disease influenced the acceptance of health providers. This study also found that the negative attitudes were related to the misconception of HIV transmission and prevention as well as over anxiety of transmission risks from patients to providers (Harapan, et al., 2015). These situations resulted in low HIV testing and counseling uptake, delayed treatment, disengagement from health care and poor adherence to medication among PLHIV (Ion & Elston, 2015; Merati, et al., 2005; Wisaksana et al., 2009).

Rationale

The availability of highly active antiretroviral therapy (HAART) increases the life expectancy of HIV patients. Along with that, lifestyle modification and nutrition support are required to manage the disease and its complications (Dong & Mangili, 2009). Since PLHIV are susceptible to malnutrition and other metabolic problems, adequate nutrition is essential (de Pee & Semba, 2010; Poda, Hsu, & Chao, 2017). Appropriate nutrition care is needed to strengthen patients’ immune system, delay the disease progression, and improve quality of life (K R. Dong & Imai, 2012; Gardner & Sucher, 2011; Pribram, 2010; WHO Regional Office for South East Asia, 2007). Considering this, dietitian plays an important role in HIV management.

However, little is known about dietitians’ awareness, attitudes, and competence on performing nutrition care for HIV patients. Previous analyses were mostly done among other

providers such as doctors, nurses, and dentists (Gagnon, 2015; Harapan, et al., 2015; Merati, et al., 2005; Paxton, et al., 2005; Waluyo, et al., 2015), or focused on the effect of particular nutrition intervention such as supplementation on clinical signs and symptoms (Collin et al., 2015; Diouf et al., 2016; Dougherty et al., 2014). In Indonesia, research on HIV and nutrition is even more limited. Existing research tends to focus on the clinical and social impacts of HIV, treatments, and AIDS co morbidities (Sudjaritruk et al., 2016; Tanaskovic et al., 2016; Witaningrum et al., 2016). Social and behavioral studies were also conducted to analyze the determinants of HIV and its societal impacts among the key population (Altaf Chowdhury, Smith, Trowsdale, & Leather, 2016; Hadikusumo et al., 2016). In addition, intervention studies or trials were performed targeting these particular groups mainly to assess the effectiveness of screening, behavioral change communication, education, and harm reduction program (Nelwan et al., 2015; Nelwan et al., 2016; Safika, Johnson, Cho, & Praptoraharjo, 2014; Wammes et al., 2012).

Although education and behavior change communication (BCC) programs are available for the general population, training directed to health professionals is limited to basic knowledge of HIV, treatment, and symptom management. Effective service delivery, anti discriminatory behavior and human rights are often overlooked (Indonesian National AIDS Commission, 2014). Besides, the documentation, monitoring, and evaluation of the effectiveness of these training are usually poorly done (Indonesian National AIDS Commission, 2012). Therefore, this study helped fill the gap in knowledge and evidence of effective interventions to improve health professionals' competence and attitudes in HIV case management, particularly dietitians. The training model, built upon attribution theory and transformative learning, helped to understand the cause of stigma; hence tailor the training to the root causes of the problems. While educating

the general population means reaching wider audiences, and training for the currently practicing dietitians serves as a continuing education, a training directed to dietetics students has its merits. The training, which ran officially through the university system, was benefited from the formal academic structure, well-organized program operational and continuous support. These benefits will provide built-in sustainability that is usually lacking in other programs. Moreover, training the students meant exposing them to more experience with HIV discourse way before they start their professional career. It may help desensitize their preconceived negative ideas about HIV (ECSA-HC, FANTA, & LINKAGES Project, 2008; Ramirez-Valles, Kuhns, & Manjarrez, 2014). Thus, this study might contribute to a considerable endeavor of a better quality of care in nutrition for PLHIV in the future.

Theoretical Framework of the Studies

The theoretical perspective that provided a framework for this study is attribution theory, created by Fritz Heider, as published in his monograph, *The Psychology of Interpersonal Relations*, in 1958. Attribution theory seeks explanation on the perceived causes of events instead of the actual causes, thus explain the ways of individual attempts to understand the cause of events such as success, failure, disease, or certain behavior as a matter of everyday or common sense activities (Forsterling, 2001). In terms of understanding stigma, this theory suggests that individuals attribute behavioral reasons to certain conditions and that those who are members of a disadvantaged group are more likely to face greater negative attributions. This theory explains that the attribution that someone makes can either be classified as one that is internal, stemming from a person's own attributes, or external, stemming from situation factors, such as luck or their environmental surroundings (Harvey & Weary, 1984; Malle, 2011).

The process of attributing such situational factors and making inferences that manifest in certain behavior usually happens without the person's awareness of them doing so (Harvey & Weary, 1984). Considering the tenets of attribution theory that underpin the attribute given to PLHIV; personal responsibility, controllability, perceived dangerousness, and familiarity, an effort beyond an instructional approach that can trigger the sense of familiarity and acceptance is much needed. Therefore, the theory of transformative learning complemented the design of this study as well. Transformative learning theory emphasizes that the best learning approach is conducting training based on exploratory needs. It respects that an individual has his or her own experiences and feelings, and only this person can explain that behavior. To achieve the learning objectives, this theory encourages self-reflective activity (Aliakbari, Parvin, Heidari, & Haghani, 2015; Laver & Croxon, 2015). While attribution theory serves as the theoretical framework for the study, transformative learning theory informed the design of the learning experience and in-class activities.

To answer the research questions, this dissertation was conducted in both qualitative and quantitative approaches, in which the attribution theory will serve as the theoretical framework of the study. Kelly and Michela (1980) proposed the attribution or perceived causal explanation as a result of internal (e.g. beliefs) and external stimuli (e.g. information). This framework can be used as part to understand HIV related stigma and develop effective ways to improve attitudes towards HIV and AIDS (Forsterling, 2001; Kelley & Michela, 1980). This dissertation presents three separate articles, each address a specific research question aimed at improving the competence of dietetics students on providing care for HIV patients. The primary research goal of this study is, however, to improve the knowledge (HIV comprehensive knowledge and HIV – nutrition specific knowledge) as well as attitudes of dietetic students towards HIV and AIDS.

The first phase of the study, presented in Chapter 3, aimed to explore the learning process, which occurs in dietetic schools in Indonesia about HIV and AIDS. Understanding what is being taught about HIV in the university and how the topic is discussed between instructors and students laid the foundation for understanding the potential external stimuli of the making attribution process among the students. Considering the research objective, a qualitative study was employed using conversational interview and document analysis as a method of data collection. Findings from this phase show that even in academic settings, discussion about HIV is very limited. The topic is not formally included in the curriculum, lecturers feel reluctant to discuss HIV openly, and there is only limited opportunity to work in HIV related area.

The second phase of the study employed a quantitative approach with a cross-sectional design. The aim of this phase was to measure the extent of HIV knowledge (general and nutrition knowledge) and stigma among dietetics students. It also aimed to determine correlates of HIV knowledge and attitudes; thus, variables such as exposure to HIV information, interaction to information source and media as well as cultural values, religiosity and spirituality were collected as determinants of the outcome variable. Findings from this phase, presented in Chapter 4, showed that both the internal and external stimuli affect the attribution. The study also proved the first assumption of the attribution theory that cognitive factor (knowledge) mediates the pathway from stimuli to emotional reactions (Forsterling, 2001).

Lastly, the third phase of the study applied the attribution theory to the intervention to improve knowledge and attitude of dietetics students towards HIV and AIDS. The intervention was performed as a three-session training, which introduced HIV, nutrition care process for HIV, stigma and effective interpersonal communication between dietitians and HIV patients. To attain the objectives, the transformational learning theory complemented the training framework. The

design of the study was a pre and post intervention study with control group. Statistical analysis found that there was a significant increase in the knowledge score before and after training, and the intervention group's increment score was significantly higher than the control group. This improvement was maintained at two weeks follow-up.

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Chapter 2 - Literature Review

HIV and Nutrition

HIV (human immunodeficiency virus) is a retrovirus that attacks human immune system causing the infected individuals more vulnerable to infection. This virus can only replicate in human cells, particularly CD4 cells; thus, progressive decline in CD4 counts is an indicator of HIV and its progression. If untreated, the disease will progress from asymptomatic stage to the terminal infection stage known as the Acquired Immune Deficiency Syndrome (AIDS). As the disease progresses, the infected person becomes susceptible to several opportunistic infections and complications such as oral candidiasis, pneumonia, tuberculosis, Kaposi's sarcoma, toxoplasmosis, cryptococcal meningitis, and cytomegalovirus (CMV) infection. This process, however, may take many years depending upon many factors such as age, co-infection, medication, psychological factors, nutrition, and social support (K R. Dong & Imai, 2012; Gardner & Sucher, 2011; Pribram, 2010).

HIV and nutrition are interrelated. HIV causes adverse impacts on individual health and nutrition status. PLHIV are more prone to rapid weight loss and malnutrition due to prolonged infection, eating difficulties, and metabolic alterations (de Pee & Semba, 2010; Poda, et al., 2017). A study found that the risk of death among malnourished HIV patients is 2-6 times higher than the well nourished patients, regardless of the CD4 count (Braitstein et al., 2006). Therefore, maintenance and restoration of nutrition status along with antiretroviral therapy (ART), management of opportunistic infection, and hormonal changes are pillars of HIV treatment (K R. Dong & Imai, 2012; Fields-Gardner & Campa, 2010; Gardner & Sucher, 2011; Pribram, 2010).

Dietitians' roles are critical in ensuring the patients receive adequate nutrition to strengthen their immune system, delay the disease progression, as well as improve treatment outcomes and quality of life (Aberman, Rawat, Drimie, Claros, & Kadiyala, 2014; Hatsu et al., 2014; WHO Regional Office for South East Asia, 2007). Patients who start the ART regimens with good nutrition status were able to maintain their CD4 counts relatively higher than patients with lower BMI (Koethe et al., 2015). Macro and micro nutrients based supplementation were found to affect prognosis positively and mitigate the adverse effects of the treatment (Widen et al., 2015). Macronutrient supplementation with enriched food, general food ration, or ready-to-use formula is linked to improved anthropometric indicators in children and adults with HIV (McHenry, Dixit, & Vreeman, 2015; Nagata et al., 2014). Similarly, vitamin A supplementation is associated with better clinical outcomes and lower risk of mortality among HIV-infected infants, while zinc and multivitamin supplements, although further evidence is needed, may also possess similar benefit (McHenry, Apondi, & Vreeman, 2014; McHenry, et al., 2015).

HIV presents a wide array of challenges for nutritionists and dietitians. HIV and nutrition related problems are not limited to clinical manifestation of the virus or the disease treatment, but it also occurs in a community setting. Socioeconomic and cultural problems such as poverty, social isolation, and banishment that often impose upon PLHIV might put these individuals at an even greater health risk. These challenges might cause difficulties for PLHIV to access health care, routine medications, harm reduction therapy, and food assistance program (Chan, Stoové, & Reidpath, 2008; Gardner & Sucher, 2011). This situation is likely to create a further vicious cycle of HIV in the community as studies found that, for example, food insecurity causes PLHIV to engage in a riskier sexual behavior and to have lower adherence to treatment (Claros, de Pee,

& Bloem, 2014; Saghayam & Wanke, 2015). It is also reported that persistent food insecurity increases the risk of HIV progression (Feldman, Alexy, Thomas, Gambone, & Irvine, 2015).

Nonetheless, nutrition therapy is not limited to food service; it also includes education and counseling. For chronic disease such as HIV, this part of nutrition care might be more essential. The ART regimens are complex, and its potential side effects are tremendous. The symptoms such as nausea, vomiting, appetite loss, anorexia, constipation, diarrhea, and gastro esophageal reflux disease, often affect nutrition and food intake. As a result, weight loss may occur, causing significant changes in the patient's nutrition and health status. Further consequences of the drugs side effects include lipodystrophy, altered blood fats, insulin resistance, as well as hepatic and renal problems that lead to more severe complications and chronic diseases (Gardner & Sucher, 2011). On the other hand, foods, supplements, herbal remedies, and other drugs can interact negatively with the ART agents causing malabsorption, adverse effect, and viral resistance; hence, patients need to manage their medication with utmost caution (K R. Dong & Imai, 2012; Escott-Stump, 2015). Some nutrients can affect drugs absorption and metabolism, reduce drugs' efficacy, and cause discomfort to patients. The solution to these complications requires modification in the diet or the way patients take their meals in reference to their medications. Thus, nutrition education is as important as the medical nutrition therapy and the ART, to empower the patients with their lifelong disease treatment and symptom management (K R. Dong & Imai, 2012; Fields-Gardner & Campa, 2010). A trial in Honduras reported that nutrition education significantly improved body weight among the underweight and normal weight PLHIV (Palar et al., 2015). This education program was also effective to improve adherence to ART (Martinez et al., 2014).

However, despite the important role of dietitians, little is known about their awareness and competence on performing nutrition care for HIV patients. Previous analyses were mostly done among other providers such as doctors, nurses, and dentists (Gagnon, 2015; Merati, et al., 2005; Paxton, et al., 2005; Waluyo, et al., 2015), or focused on the effect of particular nutrition intervention such as supplementation on the clinical signs and symptoms (Collin, et al., 2015; Diouf, et al., 2016; Dougherty, et al., 2014). Unlike doctors and nurses who have constant direct access to the patients, most of the time, dietitians interact directly with the patients only during the nutrition education and counseling session (Palar, et al., 2015). This low exposure to HIV may affect their awareness of their prejudice and unfavorable attitudes to the patients.

HIV in Indonesia: A Situational Analysis

Although the global data shows improvement in HIV situation worldwide, Indonesia is currently the cause for concern since HIV incidence and mortality rate increased alarmingly by 48% and 127%, from 2005 to 2015 (UNAIDS, 2015; WHO Regional Office for South East Asia, 2015). Firstly detected in 1987, the epidemic in Indonesia began with low infection rates per year. However, by 2000, the prevalence has increased dramatically, mainly driven by an exponential transmission rate amongst injecting drug users (IDUs). With the national HIV prevalence of 0.5% among the adult population, it was estimated that in 2015, there were 660,000 PLHIV (WHO Regional Office for South East Asia, 2015).

HIV can be found in all parts of Indonesia and is generally concentrated among the key populations such as female sex workers (9%), people who inject drugs or PWID (36.4%), and homosexuals or male sex with male (8.5%) (Indonesian National AIDS Commission, 2012; WHO Regional Office for South East Asia, 2015). However, HIV affects the population

disproportionately. Provinces with the highest prevalence are Papua, Jakarta, Riau, and Bali, whereas the most affected groups are those between the ages of twenty and twenty-nine years old (Indonesian National AIDS Commission, 2012). Further analysis shows the particular social configuration of HIV, in which those who are marginalized due to poverty, homosexuality, illicit substance use, or engagement in commercial sex are at the center of the epidemic (Rowe, 2007). Involvement in sex and illicit drugs trade, which are usually related to poverty, creates the vicious cycle for the viral transmission. This demographic pattern confirms the social determinants of HIV in Indonesia.

The Indonesian government to control the spread of HIV has developed policies and initiated various programs mainly targeting the key populations. Harm reduction program, condom use promotion, sexually transmitted illness (STI) care, prevention of mother to child transmission (PMTCT) program, voluntary counseling and testing (VCT), viral load testing, as well as antiretroviral therapy (ARVs), have been in place. Additionally, outpatient and in-patient services are available in several referral hospitals and primary health centers to provide treatment (Indonesian National AIDS Commission, 2011; WHO Regional Office for South East Asia, 2015). At the community level, consistent condom use is promoted through various peer education activities, social marketing, and community engagement to the concentrated groups. Screening and regular check-ups are also performed in some brothels (WHO Regional Office for South East Asia, 2014). Currently, there are 1438 testing sites, 465 ART sites, and 44 needles and syringes distributed per PWID throughout Indonesia (WHO Regional Office for South East Asia, 2015)The education sector also responded by introducing sex education in the curriculum for the primary, middle and high school students. An education program to improve HIV knowledge among the youth, aged 15-24 years old, called 'Aku Bangga, Aku Tahu (I am Proud,

I Know), has also widely been implemented (Indonesian Ministry of Health., 2012; Indonesian National AIDS Commission, 2014).

However, WHO reported that health sector response towards HIV in Indonesia is underperformed, which can be attributed to several factors such as lack of coverage, limited resources, and ineffective policies (Indonesian National AIDS Commission, 2012, 2014; Unicef Indonesia, 2012). There were only 24% of all estimated PLHIV diagnosed, 8% received treatment, and 9% of HIV positive pregnant women received ART, whereas the viral suppression treatment was unavailable (WHO Regional Office for South East Asia, 2014, 2015). Poor policy implementation also hinders HIV control efforts, for example, the dubious regulation of breastfeeding for HIV-positive mothers. Despite the WHO policy to make HIV infant feeding decision at national or sub national level, the Indonesian government expects health practitioners to counsel HIV-positive mothers and assist them making their own decision about breastfeeding (Indonesian Ministry of Health, 2012; WHO, 2010). With the varying degree in quality of antenatal care and counseling services, this practice may make matters worse and impede efforts to control the transmission.

In addition to the governmental efforts, actions to control HIV are also carried out by agencies, non-government organizations, and community groups. While the government focuses their efforts on the treatment, the non-government agencies mainly work on preventive actions (Indonesian National AIDS Commission, 2014). These actions are also subject to many hindrances primarily related to social, cultural, and religious reasons, on top of funding limitation and poor stewardship (AusAID, 2006; World Health Organization, 2007). At the national level, government works simultaneously with other partners to make decision and policies regarding HIV and AIDS; however, at the sub national level, community involvement is limited to the

technical aspects, which sometimes disrupting the established coordination pathways. Consequently, efforts to control HIV performed by these parties are often off limited scales as well as poorly documented and evaluated. Hence, it is difficult to determine the effectiveness of the programs and obtain evidence of the best efforts to control the epidemic (Indonesian National AIDS Commission, 2012, 2014; Unicef Indonesia, 2012).

HIV Related Stigma in Indonesia

HIV awareness campaign in Indonesia is limited since the disease is heavily stigmatized (Waluyo, et al., 2015). Because religion is embedded in almost all aspects in Indonesian way of life, discourse on sexuality are mostly treated as a taboo. Condom use campaigns are often seen as free sex advertisement instead of efforts to promote safe sex and prevent HIV (Rowe, 2007). As a result, consistent condom use remained low among injecting drug users and sex workers, with 54% and 68% respectively (WHO Regional Office for South East Asia, 2015). On the other hand, sexual education is linked to religion and prescribed as something to be discussed after marriage only (Rowe, 2007). The ‘Aku Bangga, Aku Tahu (I am Proud, I Know)’ program, for example, forbids the instructors to mention condom as a method to prevent HIV to the participants since the message is viewed to contradict the moral campaign that underpins the whole training (Indonesian Ministry of Health., 2012). As a result, despite the education program, students remain with a poor understanding of their sexuality and reproductive health, not to mention the limited knowledge on HIV and AIDS (Rowe, 2007; Utomo, McDonald, Reimondos, Utomo, & Hull, 2014). It is clear how the HIV campaign was twisted in the interplay between religion and the concept of disease prevention and treatment in Indonesia.

With only abstinence and faithfulness constructed the HIV campaign, its effectiveness is surely undermined.

On the other hand, Islam, the majority religion in Indonesia, carries faith and strong prohibitions against homosexuality (Blackwood, 2007; Rowe, 2007). A study in Malaysia involving 1296 health-care students found alarmingly stigmatized attitudes towards PLHIV who injected drugs and homosexuals, which was attributed to religion (Jin et al., 2014). Since Indonesia shares almost similar characteristics with Malaysia regarding culture and religion, the situation is likely to happen in the country. This conviction is likely to be the main hindrance for HIV campaign to reach out that particular population and for the group member of the population to seek support (Rowe, 2007; Varas-Diaz, Neilands, Malave Rivera, & Betancourt, 2010).

The 2012 survey found that less than 50% of married men and women knew the preventative measures of HIV transmission such as condom use. Also, a misconception regarding HIV is also pervasive such as a prejudice that a healthy looking person cannot have the virus or that HIV can be transmitted through mosquito bites or food sharing (Statistics Indonesia, et al., 2013). Nonetheless, understanding HIV-related stigma in Indonesia requires deeper analysis on the interplay of culture and religion. These and the fact that only small fraction of the community has adequate knowledge of HIV generates fear, anxiety, and prejudice towards the HIV individuals (Harapan, et al., 2015; Statistics Indonesia, et al., 2013; Waluyo, et al., 2015).

Acceptance to PLHIV is low in the community and among health providers (Liem & Adiyanti, 2013; Merati, et al., 2005; Paxton, et al., 2005; Statistics Indonesia, et al., 2013; Waluyo, et al., 2015). Previous studies found widespread stigmatization towards PLHIV from health professionals in Indonesia. It is reported that some patients were discriminated by the

health workers, isolated from other patients, forced to take HIV testing, and prevented from getting proper treatment (Paxton, et al., 2005; Waluyo, et al., 2015). A study on HIV in health care settings in Aceh, Indonesia, found a high level of stigmatizing attitudes among health professionals, including dietitians. The stigma, which was classified as the blame and shame stigma, caused health professionals to associate their willingness to treat HIV patients with their disease history. This study also found that the negative attitudes were related to the misconception of HIV transmission and prevention as well as fear of contagion (Harapan, et al., 2015). Stigma among health professional may cause suboptimal services and patients' discomfort to visit health services (Varas-Diaz, et al., 2010). These resulted in low HIV testing and counseling uptake, delayed treatment, and poor adherence to medication (Merati, et al., 2005; Wisaksana, et al., 2009).

Attribution Analysis of HIV Related Stigma

Fritz Heider firstly introduced the attribution theory in his monograph, *The Psychology of Interpersonal Relations*, in 1958. Attribution theory is concerned with explaining the cause of events such as success, failure, disease, or certain behavior as a matter of everyday or common sense activities. Therefore, it seeks explanation on the perceived causes of events instead of the actual causes (Forsterling, 2001). According to Kelley and Michela (1980), studies concerning perceived causation can be divided into two (Kelley & Michela, 1980). The first part of the model (Figure 2.1) represents the attribution theory, which concern with studies of the antecedent of perceived causality. Studies fall in this area are designed to test the hypothesis whether individuals assign attributes on events according to predecessor factors such as

information, beliefs, and motivation. Attributional theory, on the other hand, studies the consequences of the assigned attributions.

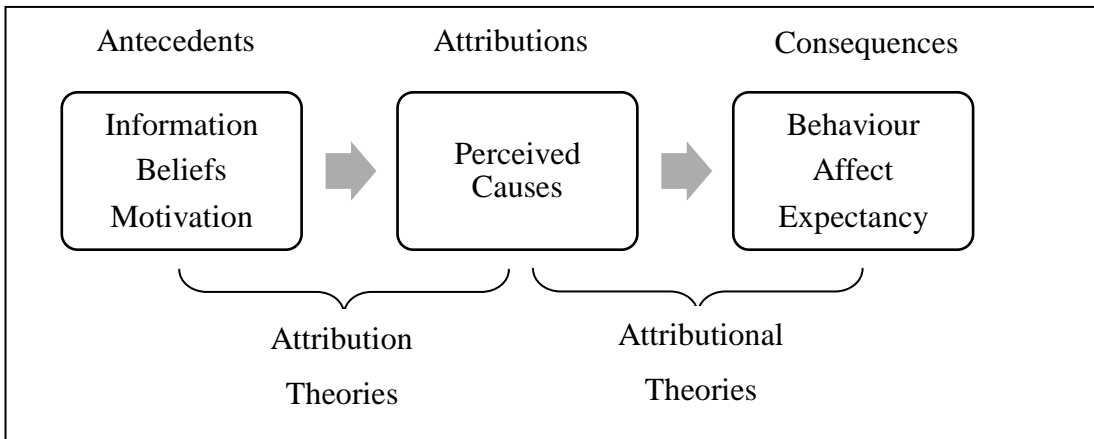


Figure 2.1 The general model of the attribution field (Kelley and Michela, 1980)

In terms of understanding stigma, attribution theory explains how people assign causation to a behavior or create labels for others (Malle, 2011). It suggests that individuals attribute behavioral reasons to certain conditions and that those who are members of a disadvantaged group are more likely to face greater negative attributions. The attribution that someone makes can either be classified as one that is internal, stem from a person’s own attributes, or external, stemming from situation factors, such as luck or their environmental surroundings (Harvey & Weary, 1984; Malle, 2011). HIV is often associated with the blemish of character such as promiscuity or homosexuality, which put blames on the individuals with HIV for their apparent lack of controllability (Bond, 2004). Conversely, the attributional theory explains the effect of the attribution on emotionally driven behavior such as fear, discomfort, disgust, and rejection that frequently reported experienced by PLHIV (Bond, 2004; Forsterling, 2001; Kelley & Michela, 1980).

The attribution theory is commonly used in studies exploring stigma such as in HIV, mental health, disability, and obesity studies (Allison & Lee, 2015; Araten-Bergman & Werner, 2016; Dolphin & Hennessy, 2014; Ramirez-Valles, et al., 2014; Zschorn & Shute, 2016). Concerning HIV, previous studies found widespread stigmatization towards PLHIV from health professionals in Indonesia. Patients reported experiencing discrimination from health workers, being forced to uptake HIV testing, rejection from treatment, and isolation (Paxton, et al., 2005; Waluyo, et al., 2015). Because HIV awareness campaign in Indonesia is limited due to the stigmatization of the disease, misconception and inaccurate knowledge about HIV are common. Moreover, lack of adequate responses from the education sector to HIV prevention efforts contribute to the aggravating HIV comprehension (Rowe, 2007; Utomo, et al., 2014). Consequently, more fear, anxiety, and prejudice are generated in the society (Rowe, 2007; Waluyo, et al., 2015). These phenomena explain parts of the stigmatization model of HIV in which discriminatory behaviors are determined by the cognitive process.

As such, the interplay of culture and religious value in HIV discourse that leads to the shame and blame to those who contracted the disease, elucidate the emotional and internally stemming of HIV attribution (Liem & Adiyanti, 2013; Rowe, 2007). With this shame and blame attitude, people believe that PLHIV are responsible for being in that group and deserve the stigmatized treatment from others (Clement & Schonnesson, 1998; Liem & Adiyanti, 2013; Ramirez-Valles, et al., 2014). Likewise, this negative treatment is determined by how they contracted with HIV (Liem & Adiyanti, 2013). The process of attributing such situational factors and making inferences that manifest in certain behavior usually happens without the person's awareness of them doing so (Harvey & Weary, 1984).

The tenets of attribution theory that underpin the attribute given to PLHIV are personal responsibility, controllability, perceived dangerousness, and familiarity. These explain how people show a tendency to hold the belief that blames PLHIV for contracted the disease. Also, in attribution theory, an increase in knowledge affects the attributions that the individual creates, as studies have shown that an understanding of situational factors helps to remove some of the bias for incorrect attributions (Harvey & Weary, 1984). Therefore, if there were a negative attribution to HIV patients by dietetics students as expected, the effects should decrease as students progress through the academic program due to an increase in knowledge provided by the program as well as the degree of exposure. Moreover, as students get a better understanding of the factors that may cause HIV as well as risks about the diseases, the negative attributions can be diminished.

As shown in Figure 2.1, attribution and attributional theory follow the psychological cognitive approach that is based on three basic assumptions. The first assumption is that stimuli do not affect behavior directly, and cognition mediates the pathway between stimuli and the reactions. This means that an individual follows the process of receiving stimuli, selecting, processing, storing and deciding the making meaning of the attributes. This is where retraining with attribution approach was usually performed to reinforce behavior change (Sarkisian, Prohaska, Davis, & Weiner, 2007). The second assumption is that attribution theory allows individuals to become naïve scientists as their attempt to understand events from realistic perspectives are remarkably close to the scientific method of inferences. It assumes that process to make attribution follow the scientific method of finding problems, formulating hypotheses, testing hypothesis and making an inference. Then, if they come across information that contradicts their conclusion, they will seek more information to prove or change their faulty attributions. Lastly, attribution theory assumes that making attribution is beneficial. For instance,

if students attribute their success to their hard work; this explanation is likely to encourage them to study more diligently to gain another academic success in the future. Thus, making these 'common sense' causal explanations will help individuals to gain insight of events with the possibility of predicting and controlling future outcomes (Forsterling, 2001).

Transformative Learning Model to Alleviate Stigma

Considering the basic assumptions of attribution theory, an effort beyond an instructional approach that can trigger the sense of familiarity and acceptance towards PLHIV is much needed. A combined model of adult learning and attribution theory is needed to reinforce not only the cognitive process but also to retrain individuals of their capacity as naïve scientists (Ramirez-Valles, et al., 2014; Sarkisian, et al., 2007). This dissertation proposed the implementation of attribution theory combined with a transformative learning theory on a training model that enables those with negative perceptions towards PLHIV to revisit their judgment. The transformative learning theory is rooted in constructivism, in which posits that 'knowledge is constructed by the individual who perceives the world, and that there is no objective reality.' The key tenets of this theory are that learning is a social process of constructing and interpreting new experiences so that critical reflection and rational discourse are heavily emphasized in the process (Association for The Study of Medical Education, 2000). To implement this theory, a certain learning environment should be created where students have unlimited opportunity to do self-discovery and develop their thoughts and feelings on their own accord. This requires teachers that can act as a facilitator to bring about changes without the students feel that they are being forced (Aliakbari, et al., 2015).

This theory is widely used in medical and nursing schools. It emphasizes that the best learning approach is training based on exploratory needs respecting that an individual has his or her own experiences and feelings, and only this person can explain that behavior (Aliakbari, et al., 2015; Laver & Croxon, 2015). Hence, it is deemed well-fitting to address stigma since it provides room for learners to challenge their existing values, beliefs, and paradigm (Association for The Study of Medical Education, 2000). This point seems to satisfy the principle of attribution theory, particularly the second assumption (Forsterling, 2001).

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Chapter 3 - Understanding HIV Knowledge and Attitudes among Dietetic Students in Indonesia: A Cross Sectional Study

Abstract

Background: Studies have demonstrated that health care students such as medical, dental, and nursing students are not immune to stigma towards people living with HIV (PLHIV). This might cause poor quality of care in the future if the attitude remains uncorrected. However, studies on dietetic students are limited despite their substantial role in HIV control.

Objective: This study aims to measure the extent of knowledge and stigma about HIV among dietetic students, and to determine the factors associated using the attribution theory.

Methods: Students from three dietetics schools in Indonesia (n=516) were recruited to participate in this cross sectional study. Survey questions covered demographic information, interaction with PLHIV and exposure to media, as well as cultural values and beliefs as the predictor variables. The outcome variables were comprehensive knowledge of HIV, HIV and nutrition specific knowledge, and attitudes. Analysis with linear regression and stepwise selection were performed to determine factors related to the outcome.

Results: The level of HIV comprehensive knowledge and HIV-nutrition specific knowledge among dietetic students in Indonesia was low, as indicated by the average score of 19.9 ± 0.19 (out of 35) and 8.0 ± 0.11 (out of 15), respectively. The level of negative attitudes towards PLHIV was high, with 99.6% of participants were reported to have high stigma score. Types of university, beliefs and values scale, exposure to HIV discussion and PLHIV, access to printed media as well as education level showed significant relations with the comprehensive knowledge

of HIV ($p < .05$). HIV and nutrition specific knowledge was related to the types of university, beliefs and value scale, participation in HIV discussion, and education level ($p < .05$). Moreover, the comprehensive knowledge of HIV, types of university, participation in HIV discussion, and ethnicity were associated with attitudes towards PLHIV ($p < .05$).

Conclusion: It is imperative that HIV- related knowledge and attitudes be further improved throughout dietetic training to improve the quality of care to PLHIV since these students represent future dietary care providers. Considering the consistent findings, that education institution determines knowledge and attitude, this study suggests an examination of the curriculum and teaching conduct in each dietetic school.

Keyword: HIV knowledge, HIV stigma, dietetic students, HIV and nutrition knowledge

Background of Study

Since the first cases were recognized in 1981, AIDS has become one of the leading causes of morbidity and mortality worldwide (UNAIDS, 2015). In Indonesia, with an annual incidence of 71,879, the number of PLHIV continues to grow (Indonesian National AIDS Commission, 2014). Nutrition problems associated with HIV or HIV treatment occur in nearly all PLHIV and can be indicative of the stage and progression of HIV infection. In the past, nutrition care mainly dealt with weight loss and wasting; however, the advancement of highly active antiretroviral therapy (HAART) increases patients' survival requires further dietary adjustment (Vining, 2009). The regimens are complex with several potential side effects such as nausea and vomiting, appetite loss, anorexia, constipation, diarrhea, and gastro esophageal reflux disease. Further consequences may include changes in the metabolic system such as

lipodystrophy, altered blood fats, insulin resistance, as well as hepatic and renal problems that lead to more severe complications and chronic diseases (Gardner & Sucher, 2011).

Considering the magnitude of nutrition issues that can affect PLHIV, the complexity of the drugs regimen, as well as the lifelong commitment to treatment, patients need to be empowered to self-care management. This requires the ability of dietitians, beyond diet prescription, to be able to transfer knowledge and skills to the patients through nutrition education and counseling (K R. Dong & Imai, 2012; Fields-Gardner & Campa, 2010). Despite the crucial role of dietitians, little is known about their awareness and capability on performing nutrition care for HIV patients. Previous analyses were mostly done among other providers such as doctors, nurses, and dentists (Gagnon, 2015; Merati, et al., 2005; Paxton, et al., 2005; Waluyo, et al., 2015). Unlike doctors and nurses who have constant direct access to the patients, dietitians interact directly with patients only during nutrition counseling session (Palar, et al., 2015). This low personal contact with PLHIV may affect their awareness of their prejudice and stigma to the patients.

Studies have demonstrated a wide range of levels of HIV-related knowledge and attitudes among health-care students from different study populations. A study among medical and nursing students in Fiji showed a high level of HIV knowledge and favorable attitude towards HIV patients (Lui, Sarangapany, Begley, Coote, & Kishore, 2014). Similar results were reported by a study among dental students in United Arab Emirates (Premadasa, Sadek, Ellepola, Sreedharan, & Muttappallymyalil, 2015). However, a survey among pre clinical medical students in Israel found that although their knowledge score was relatively good, the students' attitudes were found to include prejudicial tendency, which was attributed to shame and fear of contagion (Baytner-Zamir, Lorber, & Hermoni, 2014). This finding is similar to a study among Turkish

nursing students in which, the participants expressed hesitation to work with HIV patients. This study also revealed that the participants were lacking in HIV knowledge and still had some misconceptions about HIV (Akin, Mendi, Mendi, & Durna, 2013).

Dietetic students represent the future of dietetic care, and their academic experiences will be reflected in their future practice. The chances are high that they will find themselves working in the field of HIV and AIDS and engage with key populations. Therefore, dietetic schools are required to provide to the best of their ability the adequate knowledge and skills needed to provide care for HIV patients as well as learning experiences that encourage acceptance and willingness to help the patients. The Indonesian Nutrition Science Collegiums and The Indonesian Association of Nutrition Academic Institution regulate dietetic curriculum in Indonesia. These two organizations establish a set of minimum standard professional competency and design the dietetic curriculum for undergraduate programs accordingly. This curriculum should be followed by all dietetic schools in Indonesia; however, they are allowed to develop electives and courses that reflected their academic mission. Nonetheless, courses in HIV and AIDS are not mandatory.

This study aimed at measuring the level of knowledge (HIV comprehensive and nutrition specific knowledge) and stigma towards PLHIV among students in three dietetic schools in Indonesia. It also aimed to identify the covariates using the attribution theory. Attribution theory is originated from the social psychology area. It concerned with explaining how common sense operates to explain events and the psychological consequences of such attribution process. Thus, often times, this theory presents perceived causality instead of the actual causality (Forsterling, 2001). Attribution theory is widely used in HIV studies to explain stigma. An Early study on HIV using this theory found that HIV stigma occurred as individuals put personal responsibility

on those who contracted HIV. They blame PLHIV for their behavior such as sex with multiple partners, same-sex relations, and illicit drugs use (Weiner, Perry, & Magnusson, 1988). Because this study is among the first HIV and nutrition study conducted in Indonesia, we believe the outcomes of this study would be a substantial endeavor to improve the academic process in each dietetic school.

Method

Study design

This study was a cross sectional analytical study involving dietetics students in Indonesia, conducted between November 2016 and March 2017. Two hypotheses were tested in this study:

- 1) There is an association between access to HIV-related information and knowledge and attitudes towards HIV among dietetic students
- 2) There is an association between personal values and knowledge and attitudes towards HIV among dietetic students.

The ethical considerations of this study were approved by the Kansas State University Institutional Board Review (IRB) # 8555 as well the Medical and Health Research Ethics Committee (MHREC) Faculty of Medicine Gadjah Mada University – Dr. Sardjito General Hospital, reference number KE/FK/0129/EC/2017.

Study participants

The study population consisted of undergraduate dietetic students at junior and senior level. They were selected considering their progression through the dietetic curriculum. The sample comprised 516 students, recruited from three dietetic schools (two state universities and

one private university) with the average participation rate of 87.5% from all participating universities. Before consenting to the study, participants were informed that participation was voluntary; they were allowed to skip any questions and drop out from the study at any time; their answer would remain anonymous and would not affect their academic standing. There were eight set questionnaires used in this study that took an estimated 30 minutes to complete. No monetary incentives were provided. Table 3.1 provides detail information on the study participants.

Table 3.1 Socio demographic characteristics of the study participants

Variables	State University (N = 309)	Private University (N = 207)	Total (N = 516)
Age (years, mean \pm SE)	20.7 \pm 0.04	20.7 \pm 0.07	20.7 \pm 0.04
Gender (n, %)			
Male	15 (4.9)	16 (7.7)	31 (6.0)
Female	294 (95.1)	191 (92.3)	485 (94.0)
College year (n, %)			
Junior	164 (53.1)	107 (51.7)	271 (52.5)
Senior	145 (46.9)	100 (48.3)	245 (47.5)
Ethnicity (n, %) *			
Java	239 (77.3)	81 (39.1)	320 (62.0)
Non Java	70 (22.7)	126 (60.9)	196 (38.0)
Religion (n, %) *			
Islam	257 (83.2)	129 (62.3)	386 (74.8)
Non Islam	52 (16.8)	78 (37.7)	130 (25.2)
Frequency of worship (n, %) *			
At least once a day	258 (83.5)	109 (52.7)	367 (71.1)
At least once a week	39 (12.6)	63 (30.4)	102 (19.8)
Seldom	10 (3.2)	33 (15.9)	43 (8.3)
Never	2 (0.6)	2 (1.0)	4 (0.8)
Marital status (n, %)			
Married	1 (0.3)	2 (1.0)	3 (0.6)
Single / not married	308 (99.7)	205 (99.0)	513 (99.4)

Domicile of origin (n, %) *			
Urban	182 (58.9)	103 (49.7)	285 (55.2)
Sub urban	62 (20.1)	36 (17.4)	98 (19.0)
Rural	65 (21.0)	68 (32.9)	133 (25.8)

*statistically different at $p < .05$ (comparisons between the university groups with Chi square test)

Most participants were female (94.0%), studied in a state university (59.9%), junior (52.5%), Muslim (74.8%), pray more than once a day (66.6%), from the Java tribe (62.0%), not married (99.4%), and spent at least half of his or her formative years in urban area (55.2%). The mean of age of the participants was 20.7 years ($SE \pm 0.04$). We tested variables differences between the state and private universities using an independent t test for the age variable (continuous) and a Chi square test for the rest of the categorical variables, at $p < .05$. We found a significant difference between students from the two university groups, in which students from the private university were more varied in terms of their ethnic background, religious practice, and domicile of origin compared to those from the state universities.

Instruments

The questionnaire consisted of eight parts: 1) socio demographic information, 2) interaction with HIV and PLHIV, 3) access to information and social media, 4) Asian Value Scales, 5) Beliefs and Value Scales, 6) HIV comprehensive knowledge, 7) HIV – nutrition knowledge, and 8) HIV attitudes and stigma. The Asian Value Scale (AVS) and the Beliefs and Values Scales (BVS) were used in previous studies, whereas, the other questionnaires were developed prior to this study (Bryan S. K. Kim, Atkinson, & Yang, 1999). All questionnaires were translated into Indonesian Language and tested before the data collection began.

The AVS questionnaire was developed by Kim, Atkinson, and Yang (1999), consisted of 36 questions. It measures adherence to Asian culture as one's origin values, comprising of six factors that encompassed 24 out of 36 items, labeled as conformity to norms, family recognition through achievement, emotional self-control, collectivism, humility, and filial piety. They reported that in general, the AVS had adequate internal and test-retest reliability after two weeks. However, the coefficient alphas for this six factors were low, so it is recommended that only the AVS total score should be used to determine adherence to the Asian culture (Bryan S. K. Kim, et al., 1999). On the other hand, the BVS questionnaire was developed by King et al. (2006) consisted of 20 questions. It measures both individual religiosity and spirituality. They presented the BVS had high internal and test-retest reliability across various religious and non-religious standpoints (King et al., 2006). We performed a reliability test for the AVS and BVS in this study, yielded high Cronbach's alpha values of 0.898 and 0.859, respectively.

The HIV knowledge questionnaires (questionnaire 6 and 7) consisted of 35 questions comprises the general knowledge of HIV and HIV - nutrition specific knowledge. There were 20 items covering the basic knowledge of HIV such as the definition of HIV, modes of transmission, preventative measures, treatment, and the human rights aspects of HIV. Whereas, the nutrition part consisted of 15 items covering the principle of nutrition care process for HIV patients, counseling, and breastfeeding practice. Item responses were coded as 'Yes,' 'No' and 'Do Not Know,' with the response 'Do Not Know' scored as incorrectly. Some questions were reversed-coded. Higher scores indicated higher levels of HIV knowledge. The correct responses from 35 items were combined to yield a single comprehensive knowledge score. The HIV - nutrition specific knowledge score was a subscale of the comprehensive knowledge questionnaire, and thus treated as such in the subsequent statistical analysis. The internal validity

of the knowledge questionnaire, tested using Kuder-Richardson (KR)-20 analyses for the dichotomous response, was adequate at 0.762.

Likewise, the attitudes and stigma scale consisted of 16 items, which comprised aspects of willingness to treat HIV patients, personal responsibility of HIV, perceived dangerousness, controllability, and respects to patients' rights. Item responses were measured using a Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), in which some items were reversed-coded. All questions equated higher scores with higher stigmatized attitudes. The reliability test resulted in Cronbach's alpha coefficient of 0.763, indicating an acceptable level.

Statistical analysis

The data were analyzed using SPSS 21.0 (SPSS Inc, Chicago, IL, USA). The mean and standard error of the mean (SE) were used to describe the continuous variables, whereas, the proportion was used to describe categorical variables. Differential analysis between the state and private dietetic schools was performed using an independent t-test for the continuous variables and a Chi-square for the categorical variables. No missing values were found in this study. At the multivariate level, linear regression was conducted since all outcome variables were retained in ration scale. A stepwise selection method is applied to obtain the best-fitted model for the study outcomes. However, before fitting the regression model, we tested the model assumption to evaluate if the residuals were met the criteria, and there seemed to be no clear violation of the model assumptions in this study, as indicated in figure 3.1.

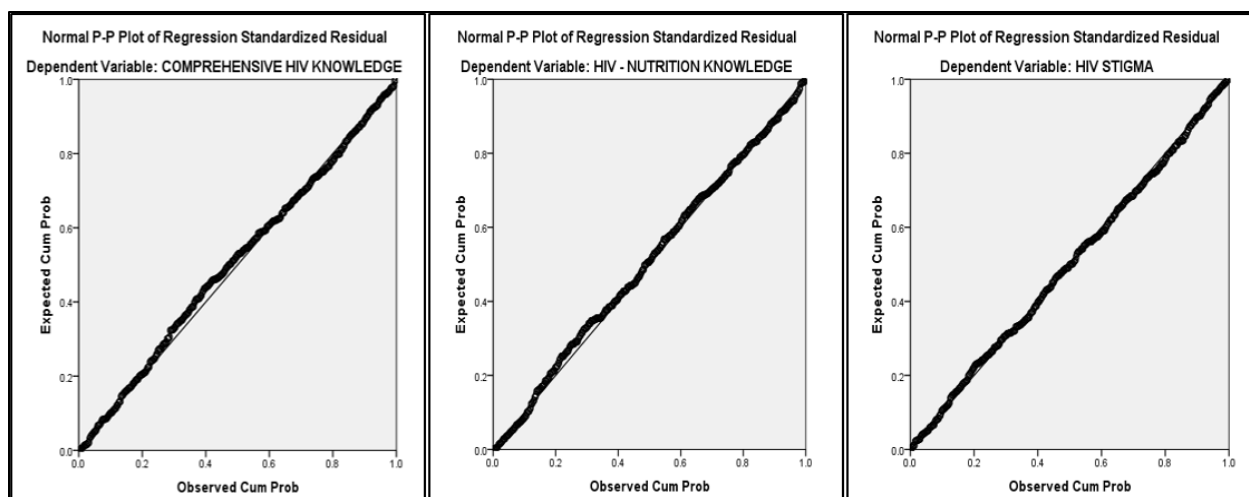


Figure 3.1 The regression model standardized residual

Results

Interaction with PLHIV and access to information

To obtain information about prior exposure and interaction with HIV and PLHIV, respondents were asked four ‘yes’ and ‘no’ questions on whether they ever known PLHIV, took part in a class discussion about HIV, received training in HIV outside campus, and are aware of HIV protocols. The result showed that most of the participants neither were known any PLHIV (77.1%) nor participated in HIV training (69.8%). Although most of them had taken part in a class discussion about HIV (79.7%), only a few of them were aware of HIV guidelines and protocols (36.0%). Students from the private university had significantly higher opportunity to take part in HIV discourse in class and to undergo training in HIV. Likewise, they were more aware of HIV guidelines and protocols ($p < .05$).

The access to information questionnaire covered eight media and social media that were frequently accessed by Indonesian students to obtain and share information, which included TV, radio, internet, printed media (magazines and newspaper), Facebook, Twitter, MySpace, and

LinkedIn. Participants were asked to estimate their average access time per day in hours for each media. Data presented in Table 3.2 showed that most of the participants obtained information from TV (94.9%) and the internet (95.7%), in which more than half of the participants spent more than six hours using the internet. Likewise, Facebook was the most frequented social media (86.0%). This study found that the participants from the state university had more access to media than those from the private university.

Table 3.2 Experience with PLHIV and access to information

Variables	State University (N = 309)	Private University (N = 207)	Total (N = 516)
Known of PLHIV (n, %)			
Yes	77 (24.9)	41 (19.8)	118 (22.9)
No	232 (75.1)	166 (80.2)	398 (77.1)
Ever discussed HIV in class (n, %) *			
Yes	223 (72.2)	188 (90.8)	411 (79.7)
No	86 (27.8)	19 (9.2)	105 (20.3)
Participated in HIV training (n, %) *			
Yes	44 (14.2)	112 (54.1)	156 (30.2)
No	265 (85.8)	95 (45.9)	360 (69.8)
Aware of HIV protocols (n, %) *			
Yes	83 (26.9)	103 (49.8)	186 (36.0)
No	226 (73.1)	104 (50.2)	330 (64.0)
Use of TV per day (n, %) *			
Never	13 (4.2)	13 (6.3)	26 (5.1)
≤ 1 hour	120 (38.8)	51 (24.6)	171 (33.1)
2 – 3 hours	115 (37.2)	84 (40.6)	199 (38.6)
4 – 5 hours	37 (12.0)	29 (14.0)	66 (12.8)
6 – 7 hours	18 (5.8)	11 (5.3)	29 (5.6)
> 7 hours	6 (2.0)	19 (9.2)	25 (4.8)
Use of radio per day (n, %) *			
Never	96 (31.1)	99 (47.8)	195 (37.8)
≤ 1 hour	157 (50.8)	81 (39.1)	238 (46.1)

2 – 3 hours	44 (14.2)	14 (6.8)	58 (11.2)
4 – 5 hours	9 (2.9)	7 (3.4)	16 (3.1)
6 – 7 hours	2 (0.7)	2 (1.0)	4 (0.8)
> 7 hours	1 (0.3)	4 (1.9)	5 (1.0)
<hr/>			
Use of internet per day (n, %) *			
≤ 1 hour	5 (1.6)	17 (8.2)	22 (4.3)
2 – 3 hours	36 (11.7)	55 (26.6)	91 (17.6)
4 – 5 hours	91 (29.4)	46 (22.2)	137 (26.6)
6 – 7 hours	63 (20.4)	31 (15.0)	94 (18.2)
> 7 hours	114 (36.9)	58 (28.0)	172 (33.3)
<hr/>			
Use of printed media per day (n, %)			
Never	84 (27.2)	66 (31.9)	150 (29.1)
≤ 1 hour	191 (61.9)	112 (54.1)	303 (58.7)
2 – 3 hours	30 (9.7)	23 (11.1)	53 (10.3)
4 – 5 hours	2 (0.6)	0 (0.0)	2 (0.4)
6 – 7 hours	2 (0.6)	5 (2.4)	7 (1.3)
> 7 hours	0 (0.0)	1 (0.5)	1 (0.2)
<hr/>			
Access to Facebook per day (n, %) *			
Never	47 (15.2)	25 (12.1)	72 (14.0)
≤ 1 hour	206 (66.7)	81 (39.1)	287 (55.6)
2 – 3 hours	37 (12.0)	60 (29.0)	97 (18.8)
4 – 5 hours	13 (4.2)	20 (9.7)	33 (6.4)
6 – 7 hours	5 (1.6)	12 (5.8)	17 (3.3)
> 7 hours	1 (0.3)	9 (4.3)	10 (1.9)
<hr/>			
Access to Twitter per day (n, %) *			
Never	118 (38.2)	109 (52.6)	227 (44.0)
≤ 1 hour	150 (48.5)	71 (34.3)	221 (42.8)
2 – 3 hours	25 (8.1)	20 (9.7)	45 (8.7)
4 – 5 hours	10 (3.2)	4 (1.9)	14 (2.7)
6 – 7 hours	4 (1.3)	1 (0.5)	5 (1.0)
> 7 hours	2 (0.7)	2 (1.0)	4 (0.8)
<hr/>			
Access to MySpace per day (n, %)			
Never	285 (92.3)	183 (88.4)	468 (90.7)
≤ 1 hour	22 (7.1)	20 (9.6)	42 (8.1)
2 – 3 hours	0 (0.0)	1 (0.5)	1 (0.2)
4 – 5 hours	1 (0.3)	0 (0.0)	1 (0.2)
6 – 7 hours	0 (0.0)	2 (1.0)	2 (0.4)

> 7 hours	1 (0.3)	1 (0.5)	2 (0.4)
Access to LinkedIn per day (n, %)			
Never	248 (80.3)	173 (83.6)	421 (81.6)
≤ 1 hour	49 (15.9)	22 (10.6)	71 (13.7)
2 – 3 hours	6 (1.9)	7 (3.4)	13 (2.5)
4 – 5 hours	4 (1.3)	1 (0.5)	5 (1.0)
6 – 7 hours	0 (0.0)	1 (0.5)	1 (0.2)
> 7 hours	2 (0.6)	3 (1.4)	5 (1.0)

*statistically different at $p < .05$ (comparisons between the university groups with Chi square test)

Cultural values and spirituality

The AVS scores were totaled and divided by 36 to create a single score as presented in Table 3.3. The mean AVS score of the participants was 4.9 ($SD \pm 0.47$) out of 7.0; considered as high adherence to the Asian values (Bryan S. K. Kim & Atkinson, 2002). The AVS subscales were calculated to provide a clear depiction of the tenets of the Asian philosophy; however, these subscales were excluded from further statistical analysis considering the low coefficient alpha of the subscales (Bryan S. K. Kim, et al., 1999). The subscale analysis revealed that students from the state university scored higher in emotional self-control, collectivism, and humility; but lower in filial piety score. The humility value was found to be the dominant value adhered to by the participants ($p < .05$).

Table 3.3 Social, cultural, and spirituality aspects of the study participants

Variables	State University (N = 309)	Private University (N = 207)	Total (N = 516)
Asian Values Scales (AVS)			
Total scales (mean \pm SE)	4.9 \pm 0.03	4.8 \pm 0.04	4.9 \pm 0.02
Conformity to norms	4.7 \pm 0.03	4.7 \pm 0.04	4.7 \pm 0.02
Family recognition	4.6 \pm 0.06	4.8 \pm 0.09	4.7 \pm 0.05

Emotional self-control *	5.1 ± 0.04	4.9 ± 0.06	5.0 ± 0.03
Collectivism *	5.2 ± 0.04	4.9 ± 0.08	5.0 ± 0.04
Humility *	5.4 ± 0.05	5.2 ± 0.07	5.3 ± 0.04
Filial piety *	4.6 ± 0.04	4.7 ± 0.05	4.6 ± 0.03
Beliefs and Values Scales (BVS)			
Total scales (mean ± SE)	58.7 ± 0.42	57.5 ± 0.65	58.2 ± 0.36
Low (n, %)	5 (1.6)	9 (4.3)	14 (2.7)
High (n, %)	304 (98.4)	198 (95.7)	502 (97.3)

*statistically different at $p < .05$ (comparisons between university groups with independent t-test)

On the other hand, the BVS scores ranged from 0 to 4 per items; hence, the maximum possible single score for BVS is 80. The cutoff to determine the low score of BVS is 40 (King, et al., 2006), therefore, with the average score of 58.2 ($SD \pm 8.26$), the participants showed high spirituality level (97.3%). There were no significant differences in the BVS score between the public and private dietetic schools as indicated in Table 3.3.

HIV knowledge and attitudes

The knowledge questionnaire consisted of 35 questions with 15 questions of it were designated specifically to test the participants' understanding of nutrition care for PLHIV. The mean and standard error of the mean for the comprehensive and subscale score were 19.9 ± 0.19 , and 8.0 ± 0.11 . With the cutoff of 75% for all composite scores, less than 3% of the participants had a good understanding of HIV and its nutrition care. On the other hand, there were 16 items comprised the attitude questionnaire with the maximum total score of 80; however, the higher scores indicated high prejudicial attitudes. The average and standard error of the mean of the attitudes score was 42.7 ± 0.27 . With the cutoff of 20 to determine favorable attitudes, this study found that only 0.4% of the respondents had positive attitudes towards PLHIV. Further, there

were no significant differences in scores of knowledge and attitude between students from private and state dietetics schools. These findings were presented in Table 3.4.

Table 3.4 HIV knowledge and attitudes

Variables	State University (N = 309)	Private University (N = 207)	Total (N = 516)
HIV comprehensive knowledge (mean ± SE)	21.3 ± 0.21	18.1 ± 0.33	19.9 ± 0.19
Low (n, %)	299 (96.8)	204 (98.6)	503 (97.5)
High (n, %)	10 (3.2)	3 (1.4)	13 (2.5)
HIV- nutrition knowledge (mean ± SE)	8.5 ± 0.13	7.3 ± 0.18	8.0 ± 0.11
Low (n, %)	302 (97.7)	202 (97.6)	504 (97.7)
High (n, %)	7 (2.3)	5 (2.4)	12 (2.3)
HIV stigma (mean ± SE)	41.2 ± 0.32	44.9 ± 0.43	42.7 ± 0.27
Not favorable (n, %)	309 (100.0)	205 (99.0)	514 (99.6)
Favorable (n, %)	0 (0.0)	2 (1.0)	2 (0.4)

*statistically different at $p < .05$ (comparisons between university groups with independent t-test)

Factors associated with HIV knowledge and stigma

Multivariate analysis was performed using the linear regression with stepwise selection to obtain the best-fitted model for both outcome variables. Model assumptions were tested prior to analysis, and there seemed to be no clear violation of the assumptions (figure 3.1). The predictor variables were socio demographic information (age, gender, ethnicity, marital status, and years of study), exposure to PLHIV and access to information, Asian values scales, as well as religiosity and spirituality. Variable comprehensive HIV knowledge was included in the linear regression test for the outcome variable stigma. Several regression models were created using the predictor variables, and the best linear regression models were identified.

Table 3.5 Results of linear regression analysis of knowledge and attitude towards HIV

	<i>b</i>	SE	β	<i>t</i>	<i>p</i>
Outcome variable: HIV comprehensive knowledge					
Constant	15.360	1.329		11.560	<.001
Type of university	-3.186	.369	-.353	-8.641	<.001
Beliefs and values scale	.117	.021	.218	5.483	<.001
Interaction with PLHIV	-.962	.435	-.091	-2.211	.028
Access to printed media	.514	.238	.086	2.156	.032
Years of study	-.776	.362	-.088	-2.145	.032
Ever discussed HIV in class	-.905	.451	-.082	-2.004	.046
Adjusted $R^2 = 0.199$, $F = 22.294$, $p < 0.001$					
Outcome variable: HIV-nutrition knowledge					
Constant	6.218	.757		8.210	<.001
Type of university	-1.277	.217	-.253	-5.870	<.001
Beliefs and values scale	.047	.013	.155	3.692	<.001
Ever discussed HIV in class	-.884	.265	-.144	-3.340	.001
Years of study	-.444	.208	-.090	-2.131	.034
Adjusted $R^2 = 0.098$, $F = 15.023$, $p < 0.001$					
Outcome variable: HIV-related stigma					
Constant	49.645	1.336		37.173	<.001
HIV comprehensive knowledge	-.361	.059	-.264	-6.085	<.001
Type of university	2.723	.593	.220	4.595	<.001
Ever discussed HIV in class	-1.782	.629	-.118	-2.835	.005
Ethnicity	-1.201	.547	-.096	-2.196	.029
Adjusted $R^2 = 0.163$, $F = 26.021$, $p < 0.001$					

Table 3.5 presented the selected regression model for HIV knowledge and attitude; sub analyses were performed to create a model to explain the HIV and nutrition knowledge variable. Six predictor variables were retained in the HIV comprehensive knowledge model; types of university affiliation, beliefs and value scales, interaction with PLHIV, access to printed media,

years of study, and experience with HIV class discussion (adjusted $R^2 = 0.199$, $F = 22.294$, $p < 0.001$). For the subset analysis, the model contained university affiliation, spirituality, class discussion participation and years of study as predictor variables (adjusted $R^2 = 0.098$, $F = 15.023$, $p < 0.001$). Likewise, HIV comprehensive knowledge, university affiliation, participation in HIV discourse and ethnicity were found as the predictor variables in the HIV stigma model (adjusted $R^2 = 0.163$, $F = 26.021$, $p < 0.001$).

Discussion

According to the attribution theory, the problems of stigma and discrimination towards PLHIV can stem from both internal and external factors (Forsterling, 2001). Our study supports this theory as we found that HIV knowledge and attitudes were determined by several external factors such as academic experience, exposure to PLHIV, and access to media; on top of the internal factors like beliefs and cultural background. This study is the first to report on HIV knowledge and attitudes among dietetic students in Indonesia. Our findings show that the level of HIV comprehension was low and stigmatized attitudes were high, which has been observed elsewhere among health care students (Akin, et al., 2013; Baytner-Zamir, et al., 2014; Jin, et al., 2014; Premadasa, et al., 2015).

The role of beliefs and culture

The importance of studying religiosity, spirituality, culture, and HIV, as proposed in this study, is underlined by the fact that Indonesia has immense cultural and religious diversity as well as high levels of religious involvement among the population. Religion and culture have always been powerful forces influencing every aspect of social life, and contrary to the Western

countries; Indonesia has never experienced desecularization along with its development. Instead, the country's modernization reinforces the practice of religious pluralism and tolerance. Thus, despite being the largest Muslim country in the world, people who practice other religions such as Catholicism, Protestantism, Hinduism, Buddhism, and Confucianism can live side by side in harmony and are protected under the national law (Adeney-Risakotta, 2014; Rowe, 2007; The Pew Research Center, 2002).

Studies on the role of beliefs and culture on HIV awareness and stigma yielded mixed results (Agadjanian, 2005; Muturi & An, 2010; Pickles, King, & de Lacey, 2017; Takyi, 2003; Varas-Diaz, et al., 2010). A study among Indonesian nurses found that those who were Muslims, religiously devoted, and working in an Islamic hospital to have negative attitudes to PLHIV (Waluyo, et al., 2015). Religious and cultural teachings in Indonesia condemned the practice of homosexuality, extramarital sex, and substances abuse, while promotion of condoms and clean needles were seen as a violation of religious principle (Hasnain, 2005; Rowe, 2007). These culturally construed beliefs, which have done much to perpetuate HIV stigma, contribute to the missed opportunity to learn more HIV and undermine treatment to the patients (Pickles, et al., 2017; Vorasane et al., 2017).

Nonetheless, our study found that high religiosity and spirituality were related to better HIV knowledge, although no association was found between religiosity and HIV stigma. Our finding corresponds to the study in Mozambique and Ghana that found the positive association between religious affiliation and HIV knowledge highlighting the potential role of religious leader as a key collaborator in HIV prevention and treatment program (Agadjanian, 2005; Takyi, 2003). The possible explanation for this positive relation could lie in the fact that Indonesian

embraces the value of religious pluralism and thus, do not totally discourages the discussion and learning activities on HIV and sexuality.

Likewise, we found the role of culture on HIV stigma in the form of ethnicity. Having Java tribe as an ethnic background was found to be positively associated with a better attitude towards PLHIV. The association could stem from the interplay of religion and culture that is apparent within the tribe. Java, the majority tribe in Indonesia, offers a unique example of pluralism, with its palpable interconnectedness of value of Islam, Buddhism, and Hinduism in some ritualistic practices (Reid, 2014). The peaceful coexistent of a different religion as a result of embracing diversity among the Javanese might inspire them to widen their acceptance to other phenomena in the society including HIV and AIDS. An additional explanation could lie in the fact that those living in Java enjoyed better access to information, education, and health services as opposed to those with the non-Java background (The World Bank, 2016). Such inequalities, which lead to a different degree of exposure to HIV, might eventually contribute to the differential understanding of HIV and attitudes towards PLHIV.

The role of media

Mass media played a visible role in HIV prevention and stigma reduction (Oberoi et al., 2014; Tavoosi, Zaferani, Enzevaei, Tajik, & Ahmadinezhad, 2004). A systematic review on the effectiveness of different media on HIV knowledge, attitudes, and behavior in developing countries reported various outcomes of the campaign using various types of mass media. Although it yielded mixed results, most studies in this review reported the benefit of mass media on improving knowledge about HIV transmission and reducing risky sexual behavior in the community. However, this review was not able to single out the best media or the detail

communication practice to achieve the intended outcomes (Bertrand, O'Reilly, Denison, Anhang, & Sweat, 2006).

In Indonesia, the proportion of the population accessing the internet regularly increased from 5% in 2005 to 32% in 2012. This situation is complemented by the trend in the population using social media not only as a source of information but also as a means to actively participate in news sharing, a feature that most conventional media such as television, radio, and printed media are lacking. As a result, these conventional media lost their audience numbers (Ambardi, Parahita, Lindawati, Sukarno, & Aprilia, 2014). Our findings confirm this trend of digital media and social network use. We found that all of the participants in our study had internet access and more than half of them spent at least six hours on it with Facebook as the most accessed social network.

However, despite the abundant use of digital media, our study found that only printed media influence HIV knowledge. The first explanation is that culture influences the choice of media and communication style in the society. Asian culture is classified as a high context society, in which values are communicated and negotiated over emotionality. Asians are also found to prefer analogous or non-verbal languages to the digital languages. People in this culture tend to communicate indirectly and implicitly, placing the burden of understanding and making inferences on the listener (Awang, Maros, & Ibrahim, 2012; Mohd Salleh, 2005). As printed media provides ample spaces to deliver and convey the messages, it can confront the issues with a sensitivity of HIV and AIDS.

The second explanation can be attributed to the political reformation occurred in Indonesia in 1998 that act as a catalyst to the development of diverse and independent media. After years of suppression, the media market reacted by producing numerous news outlets

including the print newspaper. There has been more than 1000 newspapers since 2008 with various readerships in the country. Unlike their digital counterpart, printed newspapers were benefited from their ability to target various social, economic classes. While accessing the internet require people to purchase a computer and pay for the web connection, which were deemed as a big investment in a low-income setting, newspaper readers could access news more economically. They were able to read the information at length and spend the time processing the news as necessary (Ambardi, et al., 2014; Gigli, 2004). Hence, printed media remained a better way to disseminate information in Indonesia.

The role of education system

Dietitians and dietetic students are often overlooked in the discussion about HIV despite the abundant evidence on the importance of nutrition therapy in HIV care and control. Training often focused on doctors and nurses who are considered to have higher responsibilities in patients' treatment, while at the same time have higher risks to transmission (Mbanya et al., 2010). Topics delivered during these training were also limited to the technical or clinical necessities and often missed out of the more fundamental aspect of building a good relationship between patients and provider (Indonesian National AIDS Commission, 2014). Previous studies have demonstrated that adequate HIV knowledge is the first step to alleviate problems related to HIV including stigma (Sohn & Park, 2012; Vorasane, et al., 2017).

Similar to the medical school, all dietetic schools in Indonesia follow the national curriculum (Amin, Hoon Eng, Gwee, Dow Rhoon, & Chay Hoon, 2005). The Indonesian Nutrition Science Collegiums and The Indonesian Association of Nutrition Academic Institution develop dietetic curriculum in Indonesia. The curriculum is designed according to an established

set of standard professional competency and should be followed by all dietetic schools in Indonesia. However, each university is allowed to develop electives and courses that reflected their academic mission, and courses in HIV and AIDS are not mandatory. This explains the fact that although most of the participants have enrolled in a class that discussed HIV, their understanding about the topic remains low. When HIV becomes an optional topic in the curriculum, there is no guarantee that students would receive adequate information about HIV to encourage them cultivating non-prejudice attitudes towards PLHIV.

Of concern, the regression analysis consistently presented that university affiliation was related to knowledge and attitude towards HIV. Comparative analysis between the state and private universities also revealed that students from the private university scored lower than the state university in all types of HIV knowledge and attitude tests. The apparent difference in the way dietetic schools teach HIV to their students trigger discussion to what is being taught in each institution and require further investigation considering the scarcity in the literature about the dietetic education system in Indonesia.

However, some assumption might be extracted based on the situation within the medical education. In recent years, the numbers of private medical schools have increased considerably in Indonesia. In addition to that, the economic recession forced the government to decrease their subsidies and adopt this business-like model for higher education. This model is reported to contribute positively to the system for it obligates institution to operate more efficiently and accountably. Private institutions are also known to have less bureaucratic burden, hence more liberty to adapt with educational innovation. However, the lack of government control is likely to hamper the quality of education. In fact, private universities varied greatly in quality, with the newer and smaller institutions experiencing difficulty in establishing acceptable quality

assurance system. This situation is widely known; hence, the public universities are more favored by students and families. This creates the cycle that further jeopardize the quality of private universities as it is less likely for them to attract students with the better academic standing (Amin, 2004; Amin, et al., 2005; Asian Development Bank, 2012; Susanti, 2011).

Enforcing that all dietetic schools follow the same set regulation for curriculum implementation and quality assurance might be necessary to ensure all dietetic students having similar academic experiences and develop the skills needed in the workforce. Educational innovation and experimentation must be reported and documented properly, thus, allowing replication and comparative outcomes analysis (Amin, 2004). Our study suggests in order to improve the situation with HIV knowledge and attitude, dietetic schools need to ensure that students have opportunities to interact with the patients, have access to information sources and discuss HIV in a class setting with their peers and instructors. This finding corresponds with previous studies, which indicated higher exposure to HIV information and PLHIV improves awareness and acceptance to the individuals (Jin, et al., 2014; Vorasane, et al., 2017; Waluyo, et al., 2015).

Limitations

Several limitations should be taken into consideration in interpreting the result of this study. Firstly, the sample of dietetic students was selected conveniently from three universities setting only. Although these universities had wide coverage of student intake throughout Indonesia, which enable a culturally diverse study sample and might be typical of dietetic students in Indonesia, this assumption was not validated in the analysis. Nonetheless, the limited

study setting might affect the external validity of the study and inferences must be made with caution to the study setting.

Secondly, the survey instruments might influence responses from the participants due to the use of standard Indonesian language and dialect, which may not address the discrepancies in language comprehension from participants who come from remote areas of Indonesia. As disparity in the quality of the education system is evident throughout Indonesia, students coming from marginalized areas might have trouble understanding the few jargons used in the questionnaire, despite our effort to use plain language. All this might explain the result of the reliability test of the instruments. Thirdly, considering the sensitivity of the issues, there is a risk of social desirability bias in the responses causing stigma to be underreported, although the use of a self-administered questionnaire that gives more freedom and privacy to participants might minimize the problem. Finally, considering the nature of the cross-sectional study, our findings suggest an association with HIV knowledge and stigma.

Conclusion

HIV-related knowledge among Indonesia dietetic students is low while the prejudicial attitudes are inappropriately high. Findings in our study also correspond with the attribution theory and provide evidence to our hypotheses that environmental factors determine HIV knowledge and attitudes as much as personal values. The differential findings between universities and lack of positive result in the cognition area, despite participation in HIV discourse, underline the need for further analysis of the education system and curriculum of dietetic schools in Indonesia. Evaluation of the teaching conduct might be necessary to reveal the learning process in each institution that may or may not dispel stigma among the students.

Findings within this study recommend two opportunities for intervention. First, given students are generally lacking in proper and formal training about HIV, curriculum improvement needs to be conducted systematically. This could be done by either strengthening the current curriculum with HIV discussion in all relevant courses or creating electives on HIV and nutrition. Whichever options are deemed more viable, it should ensure the room to discuss HIV beyond the clinical aspects. Personal beliefs heavily influence HIV knowledge and attitudes, thus, students need to be equipped by the opportunity to analyze and discuss their beliefs and values regarding HIV so that any potential prejudice can be mitigated. Second, considering high access to media and its influence on HIV awareness, social campaign activities are necessary to foster positive attitudes and acceptance to PLHIV. This type of intervention requires partnership with cultural and religious leaders.

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Chapter 4 - ‘What We Do Not Talk About When We Talk About HIV’: Lecturers’ Dilemmas on Teaching HIV and AIDS

Abstract

Dietitians play important roles in HIV care to maintain strength, energy, and immune system of people living with HIV (PLHIV). To ensure their competence in providing treatment to the patients, it is critical to understand the learning process that takes place in each dietetic school. Grounded in the theoretical framework of symbolic interactionism, the purpose of this interview study was to explain the way lecturers in nutrition and dietetic schools in Indonesia make meaning of their understanding about HIV in relation to their teaching conduct. The substantial theory that lends framework for the analysis was attribution theory that explained both how individuals ascertain attributes to HIV and the consequences of the inferences. There were thirteen participants from three dietetic schools in Indonesia involved in the study. Data were collected over a period of five months using multiple methods such as conversational interview, document analysis, and reflective research journal. All data were coded manually and grouped into thirteen categories. Four major themes emerged from the data analysis, which were presented as a thematic description. HIV discourse in dietetic schools in Indonesia is very limited since it is not formally introduced in the curriculum, lecturers are reluctant to open discussion about HIV, and there is apparent restriction to work with the HIV community.

Keywords: HIV discourse, nutrition curriculum, attribution theory, dietetic schools

Background of Study

HIV is a significant health problem worldwide. In 2015, the UNAIDS estimated that 35 million people were infected with HIV. Indonesia reported the first case of HIV in 1987 and ever since experienced rapid increase in the number of new infection. The current report estimated that there were 541,700 PLHIV in Indonesia (Indonesian National AIDS Commission, 2012; UNAIDS, 2015; WHO Regional Office for South East Asia, 2015). However, with only 24% of PLHIV were tested and the fact that HIV has a long latency to symptomatic phase; it is likely that the estimation is severely underreported (K R. Dong & Imai, 2012; WHO Regional Office for South East Asia, 2014, 2015).

One contributing factor to the situation is widespread stigmatization towards PLHIV. People are reluctant to get tested for fear of rejection, humiliation, and social isolation once they are found to have the virus (Bond, 2004). Studies found that these negative attitudes towards PLHIV result from a lack of information and knowledge about the disease (Akin, et al., 2013; Vorasane, et al., 2017). In Indonesia, HIV awareness campaign is limited since often times the actions are deemed to contradict the cultural value and beliefs. For instance, as all religions in Indonesia condemned promiscuity and extramarital sex, condoms use promotion often seen as a campaign to support free sex instead of safe sex (Nelwan, et al., 2015; Rowe, 2007; Waluyo, et al., 2015).

Acceptance to PLHIV is low in the general population and so is among health professionals. Patients experienced isolation in healthcare, discrimination from health providers, forced HIV testing, substandard services, and rejection from getting treatment (Paxton, et al., 2005; Waluyo, et al., 2015). These resulted in not only low HIV testing and counseling uptake

but also delayed treatment and poor adherence to medication among the patients (Merati, et al., 2005; Wisaksana, et al., 2009).

Nonetheless, advancement in research on HIV medication increases the life expectancy of HIV patients. Along with that, lifestyle modification and adequate nutrition support improve disease management and patients' survival (Kimberley R. Dong & Mangili, 2009). A study found that the risk of death among well-nourished HIV patients is significantly lower than the malnourished patients, regardless of the CD4 count (Braitstein, et al., 2006). A trial in Honduras reported that dietary intervention in the form of nutrition education significantly improved weight among underweight and normal weight PLHIV (Palar, et al., 2015). Considering this, dietitians play an important role in HIV case management. Dietitians' are responsible for ensuring the patients to receive adequate nutrition to strengthen their immune system, delay the disease progression, and improve the quality of life (WHO Regional Office for South East Asia, 2007). Despite their important role, dietitians' capacity on performing nutrition care for HIV patients remained unmeasured. A previous study assessing knowledge, attitudes, and clinical competence to provide care for PLHIV were mostly done among other providers such as doctors, nurses, and dentists (Gagnon, 2015; Merati, et al., 2005; Paxton, et al., 2005; Waluyo, et al., 2015). One should note that, however, the interaction between patients and dietitians are often limited during the education and counseling session (Palar, et al., 2015). This situation is likely to undermine their awareness of prejudice and attitudes to the patients.

Education contribution to HIV prevention and stigma reduction is evident, although the effectiveness is varied from one program to another (Coverdale, Balon, & Roberts, 2011). Education can provide essential information and improve knowledge. Besides, education based intervention can reach wider population as opposed to other intervention. A review of several

education programs in Africa found that context-specific action-based learning method was effective to initiate discussion about HIV and reduce stigma (Holderness, 2012). Nonetheless, there are two important elements contribute to the effectiveness of school-based HIV education program; the curriculum and the instructors. The curriculum needs to be developed in accordance with the social context of HIV, whereas the instructors need be trained to deliver the information about HIV with sensitivity to encourage discussion in the classroom (Thomson, Currie, Todd, & Elton, 1999). Sensitivity is needed in communicating HIV and sexuality in Indonesia where the topics are heavily stigmatized (Waluyo, et al., 2015).

However, these HIV education program were mostly conducted at grades level, aiming those in the primary, middle, or high schools (Boscarino & DiClemente, 1996; Holderness, 2012). Limited studies have been done to assess HIV courses in degree level, particularly in schools that create future professionals working in HIV case management such as doctors, nurses, midwives, and dietitians. Because health professionals are not immune to stigma and discrimination towards PLHIV (Paxton, et al., 2005; Vorasane, et al., 2017), understanding what is happening in those academic institutions is of important topic. Thus, to answer the gap in research and practice, we performed this study with the purpose to explore the experiences of lecturers in dietetic school in Indonesia on teaching topics related to HIV. We also aimed to explain how their teaching conduct is influenced by their perception of past interaction with HIV. Since the curriculum is critical to ensure the effectiveness of educational endeavor, we elaborate curriculum analysis in this paper.

Methods

Research purpose and questions

The aim of this study was to explain the perspective of lecturers teaching in dietetics schools in Indonesia about HIV and how that affects their teaching conduct. To attain the research objective, this study sought to answer two research questions;

1. How do lecturers describe their experience and perspective on HIV and AIDS?
2. How do lecturers make meaning of their experience and perspective on HIV and AIDS to their teaching conduct?

Theoretical framework and research design

This study employed a qualitative inquiry, which allows a naturalistic approach to study human experience with the concept of multiple truth, reality and meaning that varied from each person depending upon their perspective and prior experience (Bhattacharya, 2017; Denzin & Lincoln, 1994). The theoretical perspective that provides a framework for this study was symbolic interactionism that aims to understand the dynamicity of how people make meaning to the physical and/or social objects in their lives (Hewitt, 2006; Williams, 2008). Lyman and Denzin explained that interactionism also deals with social structure and system in a way to understand how people interact with such social challenges. The interaction includes all individual's responses such as acceptance, refusal, resistance, and coping strategies to deal with the pressure exerted by structure and system (Hewitt, 2006).

Throughout their career, lecturers in dietetics schools are exposed to information about HIV and AIDS to some degree. Their interaction could include symbols such as textual information, statistics, dialogues, academic discussion and debate, policies, artifacts, and social

reality. However, as dynamic as the interaction or exposure is, there is no fixed outline of human conduct as implications of the encounter (Hewitt, 2006). This means that no one could predict how lecturers would turn their interaction with HIV and AIDS to their teaching conduct. To this matter, Oliver (2012) offered an explanation that symbolic interactionism shares similar assumptions and principle with interpretive description methodology on understanding complex phenomena. This is to explain that to understand the process of making inferences, the focus is not on the symbol or events rather the focus should be on how individuals perceived the events (Oliver, 2012). Using this theory, we attempted to frame how lecturers create meaning around the act of teaching HIV that fits with their everyday roles as academic instructors.

Align with the symbolic interactionism; attribution theory was applied as a substantial theory in this study. This theory is rooted in the social psychology area and aimed at explaining perceived causation and the consequences of such perception. The basic tenet is divided into two parts: 1) people interpret events (success, failure, illness, or behavior) for its causes and; 2) the way people construe perception affects their emotional reactions (Forsterling, 2001; Kelley & Michela, 1980). The first part of the theory is known as attribution theory, whereas the second part is known as attributional theory (Forsterling, 2001). Studies found that HIV interventions are surrounded by socio cultural symbols and meanings. HIV testing, for example, is viewed as a symbol of responsibility and mutual commitment to the relationship among dating couple, yet, between a married couple, it is considered as a sign of infidelity accusation to one partner and lack of trust (Conroy, 2014; Lupton, McCarthy, & Chapman, 1995). Using the first part of the theory, this study explored the symbolic meaning or attribution of HIV from the lecturers' point of view, and using the second part of the theory, it explained the impact of the attribution they have on their teaching conduct.

Considering the nature of the research question and theoretical framework, we used interview study as a methodological approach to guide the study. The interview was deemed to be appropriate for our research since the main purpose of this approach is to explore people's life experiences in certain boundaries, and interview enables the researcher to get into the boundaries and understand the perspectives (Bhattacharya, 2017; Fontana & Frey, 1994). Interview study is also considered as the best-fit method to explain complex social phenomena such as HIV and stigma. Therefore, it enables the researcher to answer research questions that seek an explanation of some social phenomena that usually start with the 'how,' 'why,' and 'what' (Fontana & Frey, 1994). This explains the reason why most of the qualitative studies in health employed interview as a primary mode of inquiry (Al-Busaidi, 2008; Britten, 1995; Contento, 2011).

Participants

Participants in this study consisted of lecturers teaching in three dietetics schools in Indonesia (two state universities and one private university). The state universities in this study are amongst the first-dietetic schools in Indonesia and known as the leading academic institution in the country. On the other hand, the private university, founded in 2008, is quite reputable, particularly in the eastern part of Indonesia. All participating universities are located in two different provinces in Java Island. These participants were selected using the maximum variance sampling method as well as purposeful sampling to obtain a diversity of experiences and allow subset analysis (Pitney & Parker, 2009; Reybold, Lammert, & Stribling, 2012).

There were two aspects considered as inclusion criteria for selection; the major subjects they taught and types of institution in where the participants' work. Lecturers in dietetic schools in Indonesia can generally be categorized as those teaching clinical nutrition, community

nutrition, or food service management; hence, these classification bounds to determine variation in perceptions and experiences of HIV among the participants. Likewise, few predetermined criteria were applied such as; participants were lecturers mainly teaching in an undergraduate program in dietetics schools in Indonesia as well as have at least a master degree in health or nutrition and one-year working experience. To protect the confidentiality, all participants were contacted separately, and pseudonyms were used throughout data analysis and reporting. Since all of the study participants know the primary investigator personally, we executed the role of a cultural insider. The participants' characteristics have been summarized in Table 4.1.

Thirteen lecturers agreed to participate in this study; eight were from the state universities and five were from the private university. Most of the participants were females, Muslims, taught clinical nutrition, and held a master degree, which currently is the minimum academic qualification to teach in an undergraduate program in Indonesia. Regarding social and cultural background, all of them were Indonesian and originally from the Javanese tribe.

Table 4.1 Characteristics participants of the study

Characteristics	Number of participants
Teaching institution	
Universitas Gadjah Mada	5
Universitas Diponegoro	3
Universitas Respati Yogyakarta	5
Major teaching division	
Clinical nutrition	6
Community nutrition	4
Food service management	3
Level of education	
Master	11
PhD	2

Ethical consideration

The study was approved by the Kansas State University Institutional Board Review (IRB) # 8555 as well the Medical and Health Research Ethics Committee (MHREC) Faculty of Medicine Gadjah Mada University – Dr. Sardjito General Hospital, reference number KE/FK/0129/EC/2017. Participations were voluntary based, and they were free to decline the invitation to participate in the study, refuse to respond to the interview questions, and withdraw their participation at any time. They were given information about the study objectives and method of data collection before consenting to the study. Their confidentiality and anonymity were protected and pseudonyms used in the study and its subsequent publications.

Data collection

Data were collected over a period of five months between November 2016 and March 2017, via conversational interview, document analysis, and research journal activity. The use of various techniques of data collection in this study should be accounted as the strength of study since they potentially enhance data credibility and work as triangulation (Baxter & Jack, 2008). Firstly, conversational interview was the primary method of data collection in this study considering the close contact between participants and the primary investigator. With this method of interview, there was a natural dialogue between the researcher and the participants, and the guide was only used as a prompt for the interview (Figure 4.1). With this method, the researcher can gain access to the life of the participants and elicit unique, rich and valuable stories about their experiences as well as beliefs, attitudes, and perceptions (Pitney & Parker, 2009). The interviews were conducted twice and face to face, with the average length of fifty minutes per interview.

The following are the interview questions guiding this study for the first interview

- Tell me about your day as a lecturer.
- What experiences have you had in relation with HIV and AIDS?
- How do you describe your experience of teaching HIV?
- Tell me your institution policy and attitude about teaching HIV.
- In what ways do you feel your interaction with HIV as well as your institution policy and attitude influence your teaching conduct?
- How do you think dietitians can contribute to HIV control in Indonesia?

The following are the interview questions guiding this study for the second interview

- Tell me how you developed your syllabus.
- Tell me how you develop the handouts.
- How close is your real teaching conduct compare to the syllabus?
- What was the consideration behind your reading materials choices for the students?
- Tell me how the students participate in the class discussion and how you provide feedback to them.

Figure 4.1 Interview guide

Secondly, document analysis was conducted to seek an explanation in a retrospective manner from the study participants. Likewise, this method was employed to clarify findings from the interview, conduct data triangulation, and complement the analysis (Pitney & Parker, 2009; Ulin, Robinson, & Tolley, 2005; Yin, 2003). Participants were asked to submit various documents such as syllabus, reading materials, handouts, lecture notes, personal publications, university handbook, a sample of student assignments and any relevant certificates at any time

between the first and second interview. These documents were also used as a prompt during the second interview.

Lastly, a reflective research journal or field notes was maintained throughout the study. Reflective research journal is a method of data collection that contains the reflection, thoughts, and evaluation of each participant's reactions to particular questions during interviews, which enables the researcher to reflect back on their research process. The reflection helps researchers to shackle the interplay of their subjectivity in their data collection and analysis by distinguishing what they see throughout the study and what that means to them. Thus, it also enhances the trustworthiness of data analysis (Janesick, 1994; Ulin, et al., 2005).

Data analysis

All interviews were transcribed at verbatim and translated to English within the same week to avoid losing the nonverbal expression and cues. Transcripts were typed and digitally saved as word files in a password-protected personal computer, which only the primary investigator could access it. The transcriptions were performed separately for each interview and coded with the participants' pseudonyms. After the transcription and translation were done, transcripts were shown to the participants for a member check, in which participants were asked to review the accuracy and completeness of the transcriptions. Also, documents received from the participants were filed, translated for the necessary parts, and dated for future references in the analysis. The focus of the document analysis was on the mapping of possibilities for HIV discourse provided within the current curriculum as well as the potential for future intervention in the academic structure. Moreover, the reflective research journal was kept at weekly basis or following the data collection dynamicity.

A manual thematic analysis with inductive approach was performed on all the data. We followed the six steps data analysis to analyze content, identify codes, categories, and themes (Braun & Clarke, 2006). The first cycle coding for all data sources (interview transcripts, documents, and reflective journals) began as an open coding process. It was done manually using the In Vivo coding method to extract literal words from the actual record (Saldana, 2012). This method uses participants' words at verbatim as codes, thus enables the researcher to capture the accurate picture of participants' understanding of HIV phenomena in the context of their professional roles as lecturers. For the documents analysis and reflective journal, attribute coding was conducted to complement results from the In Vivo coding. This method was selected considering the multiple participants, sites, and data sources in the study. Attribute coding is also known as setting or context codes since it combines the essential participants' information and the contexts, which was appropriate for this study (Saldana, 2012). Next, axial coding was used to determine the relationship between codes and group them into categories. This step was followed by the final coding process, which is known as a selective coding. In this stage, categories were integrated into themes that reflected the symbolic meaning of HIV among participants and its impact on their teaching conduct (Pitney & Parker, 2009; Saldana, 2012). Table 4.2 provides an overview of three major themes and their constituent categories.

Table 4.2 Themes and categories

Themes	Categories
Limited access to HIV resources	Limited training on HIV Limited opportunity for conducting HIV research
Selective acceptance to PLHIV	Innocent victims Personal responsibilities Controllability

Medicalization of HIV	Medical nutrition therapy for PLHIV Diet prescription for PLHIV Curriculum in clinical nutrition Nutrition and survival
Reluctance to discuss HIV	HIV as an intermezzo HIV is dangerous HIV and sexuality discourse

Results and Discussion

This study aims to explain the way lecturers in dietetics schools in Indonesia make meaning of their understanding about HIV in relation to their teaching conduct. There were thirteen categories, and four major themes arose from the data provided insight into two research questions. Using the attribution theory, the first and second themes, limited access to HIV resources and selective acceptance to PLHIV, explain the antecedent of HIV attributes. These two themes show how participants make attributes towards PLHIV according to the information they have about HIV and their beliefs. On the other hand, the third and fourth themes, explain the consequences of such attribution, which are medicalization of HIV and reluctance to discuss HIV. The application of attribution theory in this study is summarized in figure 4.2

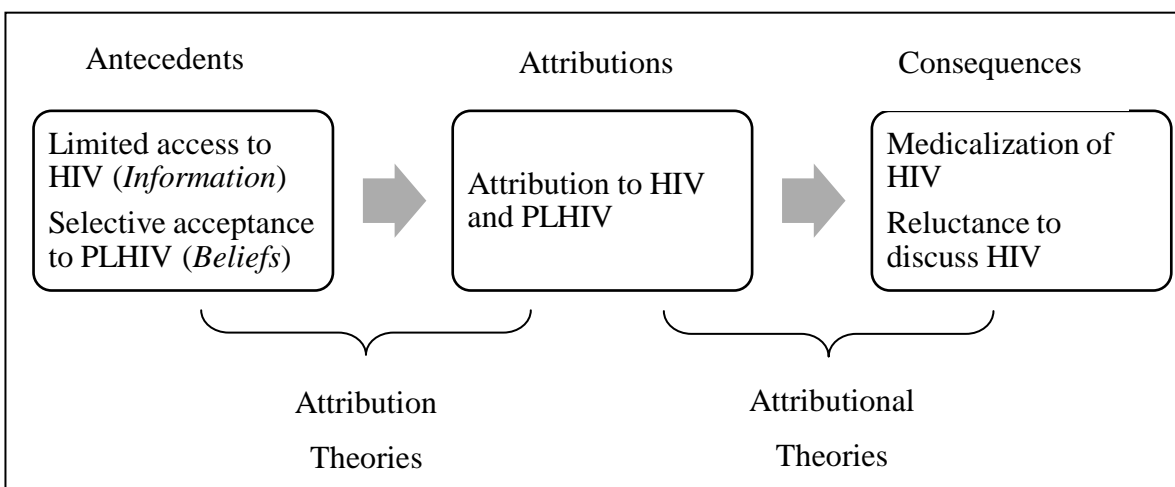


Figure 4.2 Application of attribution theory, modified from Kelley and Michela (1980)

Limited access to HIV resources

According to the first central assumption of attribution theory, cognition mediates the relationship between an antecedent or stimuli and the emotional reactions. Individuals follow the process of acquiring, selecting, processing, restoring, and evaluating information before making inferences and decision for their emotional reactions (Forsterling, 2001; Kelley & Michela, 1980). Many studies proved the importance of information, not only as a prerequisite to HIV prevention but also a precursor to attitudes to the preventative measures and those who are infected with the virus (Jin, et al., 2014; Li, Li, Zeng, & Wu, 2011; Sohn & Park, 2012). However, most of the participants in this study recalled that their only access to information about HIV was their science class in high school. The participants mentioned that their training about HIV during undergraduate or master study was very limited or almost non-existent.

The first time I learned about HIV was in senior high school [grade 10]. The science teacher taught something general about reproductive health and he touched a bit of discussion of HIV. Also, I once participated in an NGO [non-government organization] worked in family planning and HIV. They gave us training about that [HIV]. It was just general about the transmission and implication of the disease. I cannot recall if I got that [information about HIV] during either my bachelor or my master study. One thing that I remember, they did not allow me to take care the HIV patients during my clerkship; they just let me know that the person is HIV. (Daisy, female)

The participants mentioned that their training about HIV during undergraduate or postgraduate study was very inadequate. HIV was never thoroughly covered during their study as it was taught randomly as part of other courses. In addition, access to training and other professional development activities related to HIV during their academic tenure is limited. Consequently, they obtain information from other sources mostly such as TV, newspapers, internet, and research publications. However, although research journals can be considered as a good scientific source of information, it usually contains very specific information that only

appeals to certain audiences. As a result, participants admitted their limited knowledge about HIV as well as its relation to nutrition.

I have never really studied HIV. I think they discussed it a little bit in my pathophysiology class, together with sepsis when I did my undergraduate. In my master study, we discussed HIV and its five level of prevention. Thus, I learned about the prevalence and the sample of preventive programs. I do not think I got the diet [for HIV], but I believe we can follow the dietary guideline for general infectious diseases. Well, I am not so sure, but we can always read a journal [research publication]. (Mimosa, female)

Besides limited access to HIV information and training, participants in this study also mentioned about the restriction imposed on them to conduct research on HIV related topics. This restriction is not officially documented anywhere; however, the participants shared that when an idea about researching HIV is being presented, the restriction comes up.

So, I wanted to conduct a study on HIV and nutrition among female sex workers. This was supposed to be a lecturer-students collaborative research. My team and I presented the proposal. We wanted to conduct the study in brothels, measuring their nutrition status, asking about their dietary habit and such things. We also planned to give them training about healthy eating and measured the difference in knowledge and practice before and after the training but they [the grant reviewer] said that, we should drop the HIV. They said if we insist to study HIV, we would not pass the ethic [ethical approval / IRB]. (Ursinia, female)

I have never done any research in HIV. I am not sure if I want to do that. I heard that it is difficult to get the ethic approval [IRB]. They are [HIV patients] just so vulnerable, we have to treat them with caution. (Silene, female).

Lecturers in Indonesia are entitled to the triad responsibilities, called *Tri Dharma*. Within this triad, lecturers are required to fulfill three responsibilities; teaching, conducting research, and community services. While training can directly improve their knowledge, study suggests that interpersonal contact may reduce prejudice (Earnshaw et al., 2016). Research performed in

the key population is a direct access that can improve knowledge and encourage a better understanding of HIV.

Selective acceptance to PLHIV

A study in Malaysia involving 1296 health-care students found alarmingly prevalent stigmatizing attitudes towards PLHIV who injected drugs or males having sex with males (MSM), which was attributed to religiosity and ethnicity (Jin, et al., 2014). Since Indonesia shares almost similar characteristics with Malaysia regarding culture and religion, the situation is likely to happen in the society.

Indonesia is known to have immense and highly devoted cultural and religious involvement among the population. Both culture and religion share similar values that condemn the practice of homosexuality, extramarital sex, and drugs abuse (Hasnain, 2005; Rowe, 2007). The lecturer participants brought up the discussion that somewhat reflected these dominant values of Indonesian. While a disease is usually seen from the clinical perspective, there is so much of the interplay of culture and religion that influence actions directed to PLHIV that makes it impossible to leave culture and religion in HIV discourse. Moreover, there is a prevailing consensus of construed negative perception and attitudes to those who were considered to deviate from the standard norms in the general population in Indonesia.

I once assisted my friend on his community service in an HIV center. I met some HIV people, males. They look normal; people said that they cause the transmission. They are gay. These days, I am very worried. I know for a fact that the rapid increase in new case of HIV in my province is due to homosexuality. There is also that Facebook group circulating [about homosexuality], which I believe increase the risk of HIV transmission to others. I believe we need to take actions to this phenomenon (Heather, female)

Everyone can get HIV if he or she does not behave according to the religious norm. That is what I had observed from my patients. I met two of them [HIV patients] and all of them are the same, they have sex with so many people. (Tauri, male)

Weiner, Perry and Magnuson (1988) experiments on stigma singled out HIV for its high score in personal responsibility. People with HIV were held responsible for being infected with HIV. As a result they are subjected to more blame, less pity, and less assistance from others (Weiner, et al., 1988). Forsterling (2001) explained that the concept of attribution for HIV is shifted in a way that the logical explanation for an emotional reaction towards PLHIV is strongly defined by the disease history (Forsterling, 2001). In this case, the degree of controllability regarding the cause of the disease determines the attributions and even more the consequences. People who contracted the virus from a blood transfusion are seen more favorably than those who got infected from unsafe needle sharing (Weiner, et al., 1988). This creates the phenomena of selective acceptance towards PLHIV.

One of my friends posted a picture and story of his HIV patient on Facebook. She was a little girl, the same age with my daughter. She got the disease from her parents. When I read her story, I felt so sad that I almost cried. She reminded me of my daughter. She was really small for her age, very thin, and this HIV caused her to have low self-esteem. She never played with her friends; so my friend, he was a psychologist, tried to motivate her. I hope that her parents can learn from this experience. They have to contemplate and repent for their sin that brings problem to their innocent daughter. (Fern, female)

Children and women who were infected from their spouse, health professional who were infected from their patients and those who contracted HIV from blood transfusion were seen as the innocent victims of HIV (Bond, 2004). Participants tend to show more empathy to these people and more willing to provide assistance (Weiner, et al., 1988).

I feel so much different emotionally when dealing with HIV patients. I felt more emotional when I met my HIV patients who were a stay at home mother. She is innocent and did nothing wrong that can bring the virus. I have to help her. However, when I met one [HIV patient] who works in a brothel, well, I was raised within a highly religious

family, so I can differentiate the right from wrong. I think they [PLHIV] deserve whatever comes to them. (Iris, female)

Stigma is socially constructed, culturally embedded, and religiously influenced.

Therefore, those who are HIV positive and homosexuals, actively involved in commercial sex, or inject drugs are likely to suffer from double stigma. They are stigmatized due to HIV as well as their deviation from social norms. One can envision the devastating consequences if a lecturer who imposed stigma or selective acceptance towards PLHIV subconsciously instill this idea in his or her students.

Medicalization of HIV

Since the beginning of the epidemic, research in HIV is mostly conducted from the medical perspectives. The early studies were mostly focused on detecting signs and symptoms of the disease to help doctors establish the diagnosis, isolating the virus DNA to develop vaccines, as well as developing drugs and treatment regimen (Ammann et al., 1983; Gallo, 2006; Pitchenik, Shafron, Glasser, & Spira, 1984). Most recent studies shift the focus to a larger bounded system such as a health program, an institution, a health system, or a country response, with doctors as the pivotal element in HIV care.

Few studies discussed HIV from nutrition perspective mostly focused on the effect of particular nutrition intervention such as supplementation on the patients' health outcomes, or the impact of HIV on metabolism and nutrition status (Collin, et al., 2015; Congdon et al., 2015; Diouf, et al., 2016; Dougherty, et al., 2014). All these studies even led to the discussion of 'medicalized' nutrition. Under these circumstances, the data analysis resulted in one analytical theme that HIV is a medical area.

I mainly teach food service management. In this division, we do not really talk about HIV because there is no specific protocol for food service for HIV patients. They can eat everything. Besides, in food service management, we deal with mass food production, not for specific client like people living with HIV. That is why; HIV here is mostly discussed from the clinical perspectives. (Daphne, female)

We have covered all aspects of HIV although we do not have one special course allocated for HIV only. We teach them (the students) the biomedical aspects of HIV, immunology, pharmacological, and pathology. Of course, we teach them NCP [nutrition care process], so they know how to assess nutrition status, diagnose, treat [prescribed diet], and monitor and evaluate the patients. That is enough, I believe. (Hydra, male)

The medicalization of HIV discourse is reflected in the curriculum design and implementation. A thorough review of the syllabus, academic documents, and lecture notes from each participant showed the limited opportunities provided to lecturers to discuss HIV with their students. There was no class exclusively designed to teach HIV and no lecturer specifically assigned to teach HIV in all participating dietetic schools. Participants argued that since nutrition is considered as a mere complementary treatment in HIV case management, the current training, or courses that they offered in their university was adequate. Such beliefs might eventually lead to the loss of opportunity to further study in HIV and thus hinder efforts to improve awareness and understanding.

I do not think an HIV and nutrition course is necessary to be offered as a separate subject in our curriculum structure. I believe it is enough for them to understand the principle of high calorie high protein for their [HIV patient] diet. Our current curriculum is adequate to equip them with the work with HIV patients later in the future. Maybe we just need to strengthen what we already have in our clinical nutrition courses. (Fern, female)

I teach clinical nutrition in my university. We discuss HIV during tutorial and the focus of our discussion is NCP [nutrition care process], we talk about the assessment, diagnosis, intervention, monitoring, and evaluation. The diet prescription for HIV is pretty straightforward; we just need to give them high calorie and high protein diet. We might need to modify the consistency of the diet if the patients have candidiasis. (Silene, female)

I used to teach HIV in our counseling class but with the changes in our curriculum, we lost that. In that class, we taught counseling for HIV and cancer simultaneously in one meeting because HIV and cancer patients have similar emotional problems. (Dahlia, female)

The perceptions of many participants that HIV is a medical area limit their understanding on the vital role of dietitians in HIV control. Most of the participants held clear image of the benefit of good nutrition on delaying the HIV progression to the terminal stage or on ensuring patients' survival.

I want to highlight that HIV is a very complex biological process. Our role as dietitians is to prevent those who are infected with HIV from becoming more severe. There is this clinical trial from Thailand reported that nutrition supplementation could improve the survival rate of HIV patients. (Hydra, male)

I think the role of dietitians in clinical setting is clear. We can help them maintaining their nutrition status by providing healthy diet during their stay in the hospital. It seems that we can also contribute in the community, although preventing them from getting the virus is not our job. That should be the job for the public health practitioners. (Nolana, female)

While such roles that are prominent in a clinical setting are substantial, dietitians' contribution to disease prevention is also significant. Using the five level of disease prevention, dietitians can contribute in health promotion activity to prevent individuals from the disease. For instance, considering evidence from previous studies that HIV onset is associated with food insecurity, many organizations nowadays use food aid and food-for-work program to improve individual food security, and thus, preventing them from engaging in risky sexual behavior (Aberman, et al., 2014; Arrehag, De Vylder, Durevall, & Sjoblom, 2006; Kadiyala & Gillespie, 2004; Palar, et al., 2015). Additionally, dietitians could educate HIV positive mothers about safe infant feeding practices and breastfeeding to prevent vertical transmission to their babies (Muluye, Woldeyohannes, Gizachew, & Tiruneh, 2012; WHO, 2010).

Reluctance to discuss HIV

There is one musical terminology comes up while examining the emerging themes from data in this study; HIV as an intermezzo. The Merriam Webster dictionary defines intermezzo as ‘a movement coming between the major sections of an extended musical work (such as an opera)’ or ‘a usually brief interlude or diversion’ (Intermezzo [Def 2 and 3]. August 2, 2017). This musical terminology is reflected in the fact that as much as lecturers want to discuss HIV with their students, they have no opportunity to do that. They have to follow the institutional curriculum, which dictated that HIV is not an important topic of discussion among dietetic students. In many instances participants argued that it is enough to explain HIV in the framework of another aspect in medical and nutrition. HIV can be part of the class that discusses about infectious disease, food safety, nutrition care process, immunology, or pathology.

We can have an elective class in HIV if we want, but I think we have enough problems in nutrition such as obesity, under nutrition, anemia, and other nutrients deficiencies. I am afraid that if we design a class specifically for discussing HIV, we have not enough credit to teach other subjects that are more important. I think what we have now is enough. I teach HIV as part of my class in immunology. I know that Dr. X (a name of lecturer in his university) also mentions about HIV in her class on pharmacology. Dr. Y and Dr. Z (other lecturers) sometimes also discuss a little bit about HIV in their class. (Hydra, male)

Sometimes I insert information about HIV in my class, which is the health administration class. I talk about the prevalence of HIV, health system response, and insurance coverage for HIV. I sometimes also insert HIV when I discuss about condoms as means of family planning in my public health class. I do not really talk about HIV and nutrition (Elm, female)

Reluctance to discuss HIV in class can stem from the fact that discussing HIV opens the opportunity to discuss sexuality. Religion is strongly embedded in the Indonesian people’s way of life. Adherence to religious values teaches that sexual activity should only take place within marriage and homosexuality is seen as a deviation from religious norms (Rowe, 2007). While

abstinence and faithfulness help account for HIV prevention messages, lack of room to discuss sexuality creates problems to those who have no access to accurate information about the topic. These cultural taboos contributed to irrational shame and discomfort among participants during a class discussion about HIV.

Their [the students] questions are sometimes really ridiculous and trivial. They asked me whether tattoo could cause HIV. Most of the time, they are just curious about the sexual aspects of HIV. They should already know about that. I cannot believe they ask me those questions. (Daisy, female)

We do not really discuss about myths and misconception of HIV in my class. The students sometimes asked whether it is safe for them if they accidentally touch the sweats of their patients. I think they need reassurance that they would not be infected with the virus during their clinical rotation. We limit our discussion on that and the clinical aspects of HIV. I felt not comfortable when they make sexual innuendos. (Hydra, male)

The lecturer participants brought up another dimension of stigma that does not necessarily diminish with improved knowledge; fear of contagion. Regardless of the level of knowledge they have about HIV, people still show genuine fear of catching the virus. Many aspects of HIV remain unknown until today and research on the cure of HIV is not so promising. Reports generate information on the ever increasing number of morbidity and mortality related to HIV, while studies from the community publish stories of how badly PLHIV been treated by the people around them. The fear of death, disability, and losing of social standing heighten the fear of contagion (Bond, 2004). However, the participants seem to take matters further in their teaching conduct.

We do not let the students to take care of HIV patients during their clerkship. Their dietetic supervisors in the hospital also agree with this. HIV is very dangerous. It is too risky for them [the students] to handle HIV patients. (Iris, female)

There were some students here got HIV patients during their clerkship, but I think they were scared and uncomfortable so they refuse to treat the patients. They should be okay,

though, because we expect that they will just give the diet prescription to the patients, talk a little bit, and then it will be done. However, I can understand their fear and discomfort of taking care of HIV patients. They should wear a mask while talking to the patients. I understand that [the refusal]. (Silene, female)

For my socio anthropology class, I sent a group of students to visit a red light district in our province to learn about the livelihood of the people there. They can also learn about HIV there. Before, they went there, I told them ‘Go in groups, not alone, not in pairs. Just in case something happen, then, you can help each other.’ Those people [in the red light district] are very dangerous and the place is scary. I told them that they should not hang out in those shady places because the effect will be detrimental for their reputation. I am scared for sending the students there [the red light district]. I also sent another group of students to visit shelters for homeless kids. Again, that place is also very risky, so I warned them multiple times. I told them to bring the institutional cover letter and their alma mater jacket for protection. (Tauri, male)

Media report on the statistics of HIV prevalence, complication, and death rates instill fear among people in the general population. The Indonesian National AIDS Commission reported that one contributing factor to low uptake of VCT (voluntary counseling and testing) services is the fear of experiencing persistent discrimination from health workers (Indonesian National AIDS Commission, 2014). A study was conducted among 736 health professionals in an Italian hospital to determine health providers’ attitudes in the form of discrimination, acceptance, and fear towards HIV patients. The results show that stigmatized attitudes and fear towards the patients considerably decrease as the age and years of professional training. While their cultural construe and personal beliefs may compound their attitude and fear to patients, this study found that their professional integrity allows them to overcome their fear of contagion. In addition, this study reported that health professionals with more personal contact with patients have lower fear scores than those with lesser contact (Ledda et al., 2017).

While HIV and AIDS may be included in some class discussion with the students, participants in this study, instead of using the opportunity to reduce their stigma and ease the

students fear towards PLHIV, they heighten the fear. By highlighting the danger of HIV key population multiple times, denying access to the patients and refusing to remedy their prejudicial attitudes through class discussion; lecturers do more harm to the HIV individuals by creating the vicious cycle of stigma. The Italian study on HIV stigma suggests that educators can act as an agent of change by spreading comprehensive information about HIV among health workers, which include methods of HIV transmission, the use of safety procedures, accident prevention, and professional behavior. (Ledda, et al., 2017). Additionally, educators can provide more opportunities for health care students to have close contact with PLHIV to improve their awareness and acceptance towards the individuals

Likewise, participants may argue that the current curriculum implemented in their institutions have covered the essential knowledge and skills of HIV needed by their students. That is, they believed that there is nothing more needed to be discussed about HIV among dietetic students. However, this is certainly untrue. The World Health Organization (WHO) underlines the critical roles of health providers in strategies to achieve development goals (World Health Organization, 2006, 2007). Regarding the HIV epidemic, providers' responsibilities are pivotal in treatment, prevention, case management, and stigma reduction. The WHO revealed that often times, efforts to control the epidemic is hindered by lack of trained health professionals (World Health Organization, 2006). Therefore, it is certainly inadequate of HIV training if lectures just insert the discussion about HIV here and there or brush off the topics during a class discussion like an intermezzo. Furthermore, from the increasing report of negative attitudes, stigma, and unfavorable behaviors of health workers and students towards PLHIV (Gagnon, 2015; Jin, et al., 2014; Merati, et al., 2005; Paxton, et al., 2005; Waluyo, et al., 2015), it is clear

that the discussion of HIV in classroom should go beyond the medical or clinical aspects of the disease.

Nonetheless, reports about stigma and negative attitudes among providers and health care students indicate the need to reform HIV discussion in the classroom. Lecturers need to discuss HIV from a wider perspective and open discourse of sensitive aspects of HIV such as ethics, moral, stigma, and address the students' fear or anxiety towards PLHIV. They need to inspire their students on professional behavior and integrity. Studies in stigma also highlight the need for the lecturer to improve cultural sensitivity, acceptance, and communication skills of their students towards PLHIV. Participants in this study argued that for dietitians the most important thing is to master the skill of nutrition care process (NCP), which includes nutrition assessment, diagnosis, intervention, and monitoring and evaluation. Often, they overlook that dietitians in all practice level need to have good communication skills and professional behavior (Charney, 2007).

The symbolic meanings of teaching HIV

Symbolic interactionism focuses on explaining how people define and give meaning to their experiences through their social interaction with other people. From this perspective, human behavior at the present times is determined by what happened in the past (Bhattacharya, 2017; Williams, 2008). We sought to identify the experiences of lecturers using this theory, and the results revealed that their experiences are full of restriction concerning the attribution of HIV among the general population. We found two underline factors to the symbolic meaning of HIV that consider HIV is a restricted area for a dietetic student to enter.

First, participants' lack of access to comprehensive HIV information in the past contributes to the similar practice in their current academic career. They limited themselves from learning more about HIV through professional development activities or research, and when they met with obstacles along the way, they quitted the effort altogether. Since HIV was considered a medical problem primarily for a long time, they refused to perform their *Tri Dharma* on HIV beyond that area. On the other hand, in their capacity as lecturers, participants also seemed to put similar restriction to their students to have more access to HIV resources. They refused to discuss HIV out of the clinical context and prevent their students from taking care of HIV patients during their clerkship. They implemented the same curriculum design as the one that they experienced in their past dietetic training without recognizing the need to innovate and improve it considering the advancement in HIV research nowadays. A study among doctors and nurses in Lao PDR concluded that a missed opportunities to learn about HIV could undermine efforts to control HIV (Vorasane, et al., 2017).

Second, adherences to cultural and religious values are likely to impose a restriction to discuss HIV to the students. Participants' main concern is the sexuality aspect of HIV because sex is treated as a very private matter and culturally regarded as a taboo topic in Indonesia. Discussion about sexuality often occurs only within the frame of marriage and resulted in an unwillingness to discuss HIV in public (Rowe, 2007). This explains the reluctance and discomfort feelings that the participants' experienced during HIV discussion in class. Conversely, some religious and cultural teachings deliver messages that condemn certain key populations of HIV and contradict intervention to prevent HIV (Farid-ul-Hasnain, Johansson, Gulzar, & Krantz, 2013; Hasnain, 2005; Rowe, 2007). Social isolation imposed to HIV individuals and refusal to HIV prevention method become common practices so that encouraging

acceptance to those topics might be seen as disconformities to social norms. As opposed to the Western culture, the Asian culture, in general, seeks conformity instead of presenting individual uniqueness to avoid discord in harmony (H. Kim & Markus, 1999). The preference to conformity explains the participants' implicit teaching about selective acceptance towards PLHIV. In this case, the act of teaching HIV symbolizes one's moral character and adherence to religious beliefs, thus, in that sense presented lecturers with the social dilemma of being an agent of change in HIV control.

Limitations of the study

This study was conducted in three universities in Indonesia with the sample size of thirteen lecturers in dietetic schools. Participants in these universities might be different from other lecturers in other universities regarding their HIV awareness and acceptance. However, one must not seek generalization from a qualitative study. Additionally, there is a possibility that the participants provide answers that are favorable to avoid judgment and satisfy the researcher. However, the use of multiple techniques of data collection ensures the credibility of responses and trustworthiness of data analysis. Moreover, close personal contact between the researcher and the participants is likely to establish a trust that encourages participants to share their truthful experience and perception.

Conclusion

HIV discourse in dietetics schools in Indonesia is very limited. It focuses only on providing information related to the medical aspects, biological pathways, and essential treatment of HIV. Examining the experiences of lecturers provides insight into the reason behind

this situation, in which HIV is regarded as a restricted area for dietitians. This restriction is a result of lack of access to HIV resources as well as conformity to the social norms that lead to selective acceptance to PLHIV. Consequently, participants impose further restriction in their teaching conduct on HIV to their students. The focus of their teaching is limited to the technicalities of nutrition care and devoid of the humanistic aspects of HIV.

Considering the increasing report on stigmatized attitudes among health workers, lecturers need to be health advocates to promote acceptance and reduce stigma among their students. Educators might need to recognize their own ingrained personal beliefs and values about HIV before teaching the topic. Acknowledging personal bias may help them improve their teaching conduct.

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Chapter 5 - HIV Knowledge and Attitudes of Dietetic Students in Indonesia after Training using Transformative Learning Model

Abstract

Background: The recent sharp increase in new cases of HIV infection in Indonesia is of considerable concern. It requires appropriate responses from healthcare sectors and other partnering agencies. However, evidence suggests that health professionals in Indonesia may not be fully aware of HIV and accept the people living with HIV (PLHIV). There is no affirmative information from the nutrition and dietetic sector regarding this matter.

Objective: The aim of this study is to evaluate changes in student knowledge and attitudes towards HIV after completing a series of training using transformative learning model.

Methods: This study used a pre-post design with a control group to test the effect of HIV tailored training on knowledge and attitudes of students from two dietetic schools in Indonesia. A paired t-test was performed to determine the pre and post training changes, and an independent t-test was used to evaluate differences between the intervention and control group. All significant tests were set at $p < .05$.

Results: There were 114 students from assigned to the intervention group and 157 students assigned to the control group completed the pre and post tests study (80% response rate).

Students' HIV knowledge and attitudes, from both intervention and control groups, improved significantly after training. There was a significant difference between groups, and the students in the intervention group retained their achievement after two weeks follow up.

Conclusion: HIV training with transformative learning model was effective to improve students' knowledge and attitudes towards HIV. Thus, it is necessary to design an educational approach with collaborative learning model such as transformative learning and formalize it in the academic structure so that all students can be benefited from the education intervention.

Keywords: HIV knowledge, HIV attitudes, dietetic student, training, transformative learning model

Background of Study

Studies have demonstrated that despite their academic training and clinical rotations, health care students are still subjected to a low level of knowledge about HIV and stigmatizing attitudes. Misconceptions and prejudicial behavior were widely documented among medical, nursing, and dental students, which were associated with lack of awareness, fear, as well as cultural and personal values (Akin, et al., 2013; Baytner-Zamir, et al., 2014; Earnshaw, et al., 2016; Premadasa, et al., 2015). Brown, Macintyre, and Trujillo (2003) reviewed 22 intervention studies that aimed to improve attitudes towards PLHIV. Results suggest that some stigma reduction programs appear to work, although problems remained with the scaling up and sustainability of the intervention (Brown, Macintyre, & Trujillo, 2003). A study from China reported that training using the Diffusion of Innovation theory led to a more frequent HIV discussion between health care workers. The result was promising as it served as a trigger to improved acceptance to PLHIV. Since this study was administered through health authorities, it benefited regarding sustainability (Li, Lin, Guan, & Wu, 2013).

Health care students are the future of health practice and academic advancement. Their education today might reflect the future quality of care as well as the health status of their society. Therefore, integrating efforts to improve their HIV knowledge and attitude into their learning experience at the university level are deemed necessary (Jin, et al., 2014; Vorasane, et al., 2017). This approach that involved university administrator, authorities, and educators has its merits for the structural support, program coverage, and sustainability.

Although previous studies have presented the positive impact on training on health professionals' knowledge and attitudes towards HIV (Li, et al., 2013; Yiu, Mak, Ho, & Chui, 2010), little has been done to the dietetic professions and subsequently to the dietitian in training. In fact, dietitians are often overlooked in the discussion about HIV, despite the substantial responsibilities in HIV care and control (K R. Dong & Imai, 2012; McHenry, et al., 2014). We developed an intervention to improve the knowledge of dietetic students on HIV as well as to reduce their prejudicial attitudes. It tailored with the Indonesian health system, academic culture, and curriculum, as well as the social and cultural aspects of HIV. The intervention was a three-100 minutes workshop that contained information about HIV transmission, prevention, treatment, and stigma. It also covered materials on nutrition care process for HIV cases, which include nutrition assessment, diagnosis, intervention, monitoring, evaluation, and counseling. The intervention was informed by the attribution theory as an underlying conceptualization of attitudes and behavior, which consider both external and internal factors. The attribution theory acknowledged that behavioral outcomes are a result of both personal values and environmental influences (Forsterling, 2001; Weiner, et al., 1988).

Following this theory, we implemented the transformative learning model, which is an adult learning model with some fundamental aspects often described as emancipatory, cognitive,

developmental, as well as spiritually and culturally – awakening. In line with the basic tenets of attribution theory, the goal of transformative learning is to identify symbols with which individuals associate their attribution and to establish an intrapersonal dialogue with them (Dirkx, 1998; Forsterling, 2001; Merriam & Bierema, 2014). We hypothesized that conducting a tailored HIV training improved understanding and instilled positive attitudes towards HIV and AIDS among dietetic students.

Methods

Study design

This study was a pretest-posttest study with control group conducted among students in two state dietetic schools in Indonesia, between January and March 2017. The hypothesis tested in this study was that providing HIV training to dietetic students improved knowledge and attitude towards HIV and AIDS. We obtained the ethic approval from the Kansas State University Institutional Board Review (IRB) # 8555 as well the Medical and Health Research Ethics Committee (MHREC) Faculty of Medicine Gadjah Mada University – Dr. Sardjito General Hospital, reference number KE/FK/0129/EC/2017.

Study participants

The study population consisted of undergraduate dietetic students from two state universities in Indonesia. These two universities are amongst the first dietetic schools in Indonesia and leading in this field. We only involved junior and senior level students considering their academic progression through the curriculum. We assigned 114 students from one university to the intervention group and 157 students from the other university to the control

group. Participation in this study was voluntary based; respondents were able to withdraw from the study at any time without consequences; responses would remain anonymous and would not affect their academic standing.

After obtaining permission from school administrators and recruiting potential study participants, eight set of questionnaires were distributed to the consented participants. These questionnaires took an estimated 30 minutes to complete, consisted of questions on information on socio demography characteristics, interaction with PLHIV, access to media, adherence to Asian cultural values, spirituality, comprehensive HIV knowledge, HIV- nutrition specific knowledge, and attitudes. The questionnaires were self-administered, and students were required to return them to the investigator on the spot. After the intervention, we distributed the post intervention questionnaires to both groups and did the follow-up study in the intervention group to evaluate retention of knowledge and attitudes two weeks after the intervention.

Procedures

The intervention group received three – 100 minutes training and a module on nutrition care for HIV patients (Appendix 4), whereas, students in the control group received a copy of the national nutrition care guideline for PLHIV. The module was developed by incorporating guidelines, protocols, and evidence from various studies and agencies working in HIV. We also consulted several experts whose expertise is either in nutrition or HIV. The training package was built upon three topics; basic knowledge about HIV and nutrition, understanding stigma, and building effective interpersonal communications with HIV patients (Table 5.1). We designed the training so that it could be easily incorporated into the existing pre-service dietitians' training.

However, considering required prerequisite knowledge in pathophysiology, dietetics, and communication, only junior and senior students were invited to participate.

The training evaluation was conducted using qualitative and quantitative approaches. Students were asked to evaluate the training conduct, class activities, modules, learning materials, and the trainer by completing a five-range Likert scale questionnaire and answering several open-ended questions about the training. The article presented here is a part of the quantitative evaluation to assess the output of the intervention.

A questionnaire was distributed to measure the level of HIV knowledge and attitudes at baseline. Then, after we delivered the training to the students, immediate changes in scores were measured. After two weeks, another questionnaire was administered to evaluate retention of knowledge and attitudes. We performed the follow-up study in two weeks following the trajectory of knowledge retention post training, in which, students can maintain only half of their previous scores in knowledge testing at 3 to 8 days after education activities (Bell et al., 2008). Another study found that improvement in knowledge scores was maintained at two weeks after training, but insignificant improvement was found in attitude scores after two weeks observation (Richard, 2011).

Table 5.1 The HIV and nutrition training syllabus

Module	Topic distribution	Class activities
Module 1. What nutrition counselor needs to know about HIV. Purpose: To provide basic information about HIV and nutrition	<ol style="list-style-type: none"> 1. Terminology and epidemiology 2. HIV transmission 3. HIV prevention 4. Clinical staging and opportunistic infection 5. HIV treatment 6. The relation of HIV and nutrition 	<ol style="list-style-type: none"> 1. Short participatory lecture 2. Discussion 3. Case study 4. Reflective exercise 5. Conclusion remark

	7. Nutrition care process for HIV	
	8. Nutrition counseling for PLHIV	
Module 2. Understanding your patients Purpose: To provide information about the social and cultural aspects of HIV and AIDS	1. Human rights aspects of HIV 2. Ethical consideration for HIV care provision 3. Social and cultural aspects of HIV 4. Understanding stigma and misconception related to HIV 5. Providing support to HIV patients	1. Privilege games 2. Short participatory lecture 3. Mini drama 4. Discussion 5. Reflective exercise 6. Conclusion remark
Module 3. Building effective counseling relationship Purpose: To provide foundation to effective counseling for behavior change	1. Basic skills of counseling (asking, listening, and informing) 2. Motivational interviewing 3. Cultural competence for dietitians 4. Building relationship with patients 5. Giving feedback, verbal and non verbal response 6. Professionalism	1. Role play 2. Short participatory lecture 3. Discussion 4. Reflective exercise 5. Conclusion remark

Instruments

We developed and tested the module as well as the HIV knowledge and attitude questionnaires prior to this intervention study. The HIV knowledge questionnaire covered the general knowledge of HIV such as definition, prevention, and treatment (20 items) as well HIV-nutrition specific knowledge (15 items). The correct responses from 35 items about HIV knowledge were combined to yield a single score. The internal validity of this binary-result questionnaire, tested using Kuder-Richardson (KR)-20 analyses for dichotomous responses, was adequate at 0.762. Higher scores indicated higher levels of HIV comprehension. Responses to the HIV-nutrition knowledge questionnaire were studied as a subscale analysis. On the other hand, the attitudes questionnaire comprised 16 questions about participants' perception and acceptance towards PLHIV. Item responses were measured in Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The higher scores in attitudes test mean higher

stigmatized attitudes, hence unfavorable. The reliability test resulted in Cronbach's alpha coefficient of 0.763, suggesting an acceptable level.

Statistical analysis

The data were analyzed using SPSS 21.0 (SPSS Inc, Chicago, IL, USA). The mean and standard error of the mean (SE) were used to describe the continuous variables, whereas, the proportion was used to describe the categorical variables. To analyze the difference at baseline between the intervention and control group, an independent t-test was performed for continuous data such as age and score of cultural adherence, while a Chi square test was performed for categorical data such as ethnicity and exposure to HIV information. At the bivariate level, considering the absence of clear and apparent violation to the normality assumption, a paired t-test was used to analyze the difference in knowledge and attitudes, pre and post intervention. Additionally, an independent t-test was performed to analyze the difference in increment knowledge and attitude scores between the intervention and control group, immediately after training. Lastly, another paired t-test was conducted to measure the score retention in the intervention group at two weeks after the training. The significance level was set at $p < .05$.

Results

There were 271 dietetic students participated in this intervention study, 114 students were assigned to the intervention group, and 157 students were assigned to the control group. They were assigned to a certain treatment group based on their university affiliation. Participants were mostly female, junior, Muslim, from Java tribe, and not married. Table 5.2 presents the differential analysis for participants' characteristics at baseline between the intervention and

control groups. There was no significant difference in the socio demographic profiles between groups of study. We found that respondents from the control group had better opportunities to participate in HIV training and class discussion, yet less aware of HIV protocol. Other significant differences were found regarding access to media as well as of adherence to the Asian cultures. Moreover, participants in the intervention group had significantly lower scores in emotional self-control and humility.

Table 5.2 Participants characteristics at baseline

Variables	Intervention University (N = 114)	Control University (N = 157)
Age (years, mean \pm SE)	20.6 \pm 0.07	20.7 \pm 0.05
Gender (n, %)		
Male	5 (4.4)	9 (5.7)
Female	109 (95.6)	148 (94.3)
College year (n, %)		
Junior	58 (50.9)	97 (61.8)
Senior	56 (49.1)	60 (38.2)
Ethnicity (n, %)		
Java	92 (80.7)	122 (77.7)
Non Java	22 (19.3)	35 (22.3)
Religion (n, %)		
Islam	97 (85.1)	131 (83.4)
Non Islam	17 (14.9)	26 (16.6)
Marital status (n, %)		
Married	1 (0.9)	0 (0.0)
Single / not married	113 (99.1)	157 (100.0)
Domicile of origin (n, %)		
Urban	71 (62.3)	89 (56.7)
Sub urban	27 (23.7)	29 (18.5)
Rural	16 (14.0)	39 (24.8)

Known PLHIV (n, %)		
Yes	28 (24.6)	42 (26.8)
No	86 (75.4)	115 (73.2)
Ever discussed HIV in class (n, %)*		
Yes	72 (63.2)	127 (80.9)
No	42 (36.8)	30 (19.1)
Participated in HIV training (n, %)*		
Yes	4 (3.5)	34 (21.7)
No	110 (96.5)	123 (78.3)
Aware of HIV protocols (n, %)*		
Yes	40 (35.1)	36 (22.9)
No	74 (64.9)	121 (77.1)
Use of TV per day (n, %)		
Never	4 (3.5)	6 (3.8)
≤ 1 hour	50 (43.9)	51 (32.5)
2 – 3 hours	37 (32.4)	68 (43.3)
4 – 5 hours	10 (8.8)	22 (14.0)
6 – 7 hours	11 (9.6)	6 (3.8)
> 7 hours	2 (1.8)	4 (2.6)
Use of radio per day (n, %)		
Never	28 (24.6)	55 (35.0)
≤ 1 hour	60 (52.6)	78 (49.7)
2 – 3 hours	20 (17.5)	20 (12.7)
4 – 5 hours	4 (3.5)	4 (2.6)
6 – 7 hours	1 (0.9)	0 (0.0)
> 7 hours	1(0.9)	0 (0.0)
Use of internet per day (n, %)		
≤ 1 hour	1 (0.9)	3 (1.9)
2 – 3 hours	15 (13.1)	16 (10.2)
4 – 5 hours	38 (33.3)	41 (26.1)
6 – 7 hours	23 (20.2)	32 (20.4)
> 7 hours	37 (32.5)	65 (41.4)
Access to Facebook per day (n, %)*		
Never	17 (14.9)	24 (15.3)
≤ 1 hour	88 (77.2)	95 (60.5)
2 – 3 hours	6 (5.3)	24 (15.3)

4 – 5 hours	2 (1.8)	9 (5.7)
6 – 7 hours	1 (0.9)	4 (2.6)
> 7 hours	0 (0.0)	1 (0.6)
Access to Twitter per day (n, %)		
Never	36 (31.6)	68 (43.3)
≤ 1 hour	64 (56.1)	65 (41.4)
2 – 3 hours	8 (7.0)	16 (10.2)
4 – 5 hours	4 (3.5)	5 (3.2)
6 – 7 hours	0 (0.0)	3 (1.9)
> 7 hours	2 (1.8)	0 (0.0)
Use of printed media per day (n, %)*		
Never	21 (18.4)	48 (30.5)
≤ 1 hour	86 (75.4)	86 (54.8)
2 – 3 hours	7 (6.2)	21 (13.4)
> 7 hours	0 (0.0)	2 (1.3)
Asian Values Scales		
Total score (mean ± SE)	4.9 ± 0.04	4.9 ± 0.03
Conformity to norms	4.8 ± 0.05	4.7 ± 0.04
Family recognition	4.7 ± 0.09	4.5 ± 0.08
Emotional self-control*	5.0 ± 0.06	5.2 ± 0.06
Collectivism	5.2 ± 0.06	5.2 ± 0.06
Humility*	5.2 ± 0.07	5.5 ± 0.06
Filial piety	4.6 ± 0.05	4.6 ± 0.05
Beliefs and Values Scales		
Total score (mean ± SD)	58.0 ± 0.56	59.3 ± 0.60
Low (n, %)	0 (0.0)	3 (1.9)
High (n, %)	114 (100.0)	154 (98.1)

*statistically different at $p < .05$ (comparisons between groups with Chi square test)

The differences in HIV knowledge and attitude scores before and after training were tested using a paired t-test. This test was performed separately for the intervention and control groups. The expected outcomes were higher scores in HIV comprehensive and HIV – nutrition knowledge but lower score in HIV stigma post training. The result showed that there were significant positive changes in all outcome variables in the intervention group; however,

significant improvement in the control group only occurred for the HIV comprehensive knowledge. Additionally, an independent t-test was employed to detect the inter group difference or the difference in increment scores between the intervention and control groups. We found that the increment scores in HIV knowledge and attitudes post training were significantly higher among participants in the intervention group (Table 5.3). This means that the HIV training provided to the participants was able to improve HIV knowledge and reduce stigma.

Table 5.3 Changes in HIV knowledge and attitudes post intervention, inter and intra group comparison

Variables	Intervention group (d ₁)		Control group (d ₂)		Inter group difference** (d ₁ – d ₂)
	Pre mean (SE)	Post mean (SE)	Pre mean (SE)	Post mean (SE)	
HIV comprehensive knowledge	20.7 (0.35)	27.7 (0.24)	21.8 (0.28)	22.7 (0.29)	p < 0.001
Intra group* difference	p < 0.001		p < 0.001		
HIV- nutrition knowledge	7.8 (0.22)	9.9 (0.17)	9.08 (0.16)	9.11 (0.13)	p < 0.001
Intra group* difference	p < 0.001		p = 0.845		
HIV stigma	40.0 (0.48)	33.6 (0.51)	42.4 (0.43)	42.8 (0.40)	p < 0.001
Intra group* difference	p < 0.001		p = 0.182		

* paired t-test

** independent t-test

To evaluate retention in knowledge and stigma scores and subsequently assess the outcome sustainability, we measured the difference in scores before and two weeks post intervention using a paired t-test (Table 5.4). We found that two weeks after the training,

students who received training in HIV remained having higher HIV knowledge scores and lower stigma scores compared to those in the control group ($p < .05$). This finding indicated that our model intervention was able to sustain the positive outcome at two weeks after the intervention.

Table 5.4 The mean scores of HIV knowledge and attitudes two weeks after the intervention *

Variables	Pre intervention mean (SE)	Two-weeks post intervention mean (SE)	<i>p</i>
HIV comprehensive knowledge	20.7 (0.35)	27.4 (0.29)	<0.001
HIV- nutrition knowledge	7.8 (0.22)	9.6 (0.19)	<0.001
HIV stigma	40.0 (0.48)	34.5 (0.48)	<0.001

* paired t-test

Discussion

The primary objective of this study was to assess changes in students' knowledge and attitudes towards HIV after training with a transformative learning theory. Our findings suggest that an elaborated HIV and nutrition training designed in accordance with this learning theory is effective to improve HIV awareness and reduce stigma among dietetic students. Furthermore, significantly higher knowledge and lower stigma were documented at two weeks after the intervention. This initial evaluation of the intervention provides the dietetic education community with a promising tool to improve competence and skills in providing care for HIV patients.

This intervention has several strengths that will allow dietetic schools to implement the model easily. Firstly, the training model can be incorporated into the existing dietetic curriculum as either a mandatory or an elective class. The fact that this model is tailored to the issues of cultural competence and ethical aspects of dietary care facilitates the integration of the model

into the dietetic curriculum structure. Besides, the workshops are similar in structure to the dietetic classroom activities, while the length of the training can be easily expanded to fulfill the required length of coursework. Secondly, when the option to implement this model as a full-scale coursework is not viable, dietetic school administrators would still be able to incorporate the training materials into several other courses due to its interrelated contents. Lastly, the value of training based on transformative learning theory that promotes emotional as well as intellectual engagement among the participants facilitates discussion of the sensitive topic (Jackson, Power, Sherwood, & Geia, 2013).

While the literature on intervention that implements this theory to improve stigma are limited, previous work by Varas-Diaz et al. (2016) with the SPACES intervention might lend support to this study. The SPACES approach was designed following the Social Cognitive Theory that conceptualized how individuals and contextual factors affect behavioral outcomes. The SPACES study worked in the same way with the model in our study, in which participants were given the opportunity to evoke positive emotions towards PLHIV, while simultaneously enhance their self-efficacy to provide non-biased care to the patients. Findings from this study suggested that this training model could address stigma among health professionals (Varas-Diaz, Neilands, Rodriguez-Madera, & Padilla, 2016).

However, while similarly focus on the emotional aspect of stigma, transformative learning theory operates in a slightly different manner to improve attitudes. If the Social Cognitive Theory explains that learning occurs through observing others in a social environment and thus put other in a key position, transformative learning puts the learner at the center of learning. It is most notable in the early process of learning called 'disorienting dilemma.' In this step, students actively attempt to re-question their views and assumptions of a phenomenon that

usually triggered by a significant life event. Thus, the role of the educator is minimal and limited to provoking the critical re-evaluation process (Merriam & Bierema, 2014; Slavich & Zimbardo, 2012). The reflective exercise in our training model provides chances for the participants to complete this critical step in transformative learning.

Overall, our findings were consistent with previous research that suggested elaborate and tailored training as an effective method to improve HIV knowledge and attitudes among health professionals and health care students (Li, et al., 2013; Varas-Diaz, et al., 2016; Yiu, et al., 2010). Our results also confirmed a previous study that suggested the advantages of transformative-based training on addressing sensitive issues (Jackson, et al., 2013). These studies also provide evidence that increased knowledge is a necessary to improved attitudes. This supports the first assumption of attribution theory that cognition mediates the attribution process of an event.

Although the results seem promising, several steps need to be taken to improve the effectiveness of this training model in the future. Some suggestion might include determining the resources and mechanisms that could produce the most changes, tailoring the training materials to address double stigma among PLHIV (i.e. homophobia and stigma towards sex workers). Other recommendations presented such as scaling up the training coverage to other dietetic schools or even to the practicing dietitians, expanding the scope of the training, documenting the sustained effect of the intervention through a longer observational period, as well as exploring the benefit of implementing this model on behavioral aspects such as non-discriminatory behavior towards PLHIV.

Those factors above should be taken into consideration as limitations while making inferences from this study. Nonetheless, other limitations need to be accounted considering the

design of this study. Our study employed a non-random design (quasi-experimental), which reduces the internal validity of the study due to possible selection bias and the unequal distribution of residual confounders between the intervention and control groups, although this should be taken care by our statistical approach. Furthermore, this data were obtained from only two state universities in Java Island, and although the universities may have students from all over Indonesia, they were unlikely to be representative of the dietetic students' population in other provinces or the country as a whole. Given the wide discrepancy in quality of education between the western and eastern part of Indonesia as well as considerable differences between state and private universities (Asian Development Bank, 2012; Statistics Indonesia, et al., 2013), it remains for future research to determine the whether or not our training model to be relevant and as efficacious for other study context.

Conclusion

Our training model that elaborates attribution theory and transformative learning was effective to improve HIV knowledge and attitudes among dietetic students in Indonesia. Since overcoming stigma requires individual to be emotionally competent, the model needs to be developed beyond the didactic approach. It needs to provide room for learners to practice reflective exercise and cast doubt upon their previous judgment on matters. Drawing on a range of resources including real clinical case study, mini drama, role-play and interactive reflective exercise, students were challenged emotionally and intellectually by the content.

The study implies that to improve individuals' prejudicial attitudes, a pedagogical approach that combines emotional and academic engagement is necessary to increase students' understanding and acceptance of the overly sensitive topic such as HIV, stigma, and sexuality. In

the context of HIV and AIDS, Indonesia is of the utmost severity with its growing incidence rate and high stigma among the health professionals. The absence of effort to improve awareness and acceptance towards PLHIV will further contribute to poor quality of service. Thus, future research and stigma reduction interventions are required to provide evidence of the efficacy of this training model in various context and scale.

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Chapter 6 - Implication of Study

Summary of Research

Throughout the studies reported in this dissertation, common themes repeatedly emerged in relation to the problem of poor HIV knowledge and attitudes among dietetic students. We examined the current curriculum implemented in dietetic schools in Indonesia along with the teaching conduct that seems to be the cause of the problem. We found that the current curriculum does not provide adequate opportunity to students to learn about HIV and AIDS and to interact with the patients. As a result, students depend on popular and social media to obtain information, although its accuracy, impartiality, and completeness might be debatable.

From the first study, we examined the attribution theory operates through the process of stigmatizing people living with HIV (PLHIV). We found that both personal values and environmental factors influence individuals' bias to HIV (Malle, 2011; Weiner, et al., 1988). According to the current curriculum, teaching HIV and AIDS in dietetic programs is not mandatory, yet the discussion on the topic is possible through many courses that relevant to HIV. However, despite adopting the same set of competency-based curriculum from the collegium, the implementation seems to vary substantially across dietetic schools. Such un-standardized practice can be seen in the fact that university affiliation is a consistent variable in our model explaining poor knowledge and attitudes towards HIV.

We explored the notion on the dietetic curriculum and the teaching conduct in our second study. By performing a qualitative approach, we were able to gain deeper insight from the perspective of lecturers and school administrators to analyze the two sides of attribution theory; the antecedent and consequences. Fear and blame are widely known as precursors to any

emotional reactions directed towards PLHIV (Bond, 2004; Vorasane, et al., 2017; Waluyo, et al., 2015). We also found that lecturers symbolize teaching HIV with the restriction imposed by both cultural and academic barriers. However, we found that instructors in dietetic schools to take the matter further when discouraging discussion about HIV or preventing their students from interacting with the patients. This problematic practice seems to run deeper when attempted efforts to reach out to the key population were denied. These circumstances might provide answers to the lack of knowledge and favorable attitudes towards HIV.

Lastly, in our third study, we tested an intervention model to examine if a pedagogical approach can improve the circumstances of knowledge and attitude among dietetic students. The intervention, which combined the attribution theory and transformative learning, assists participants in re-questioning their attribution to HIV and PLHIV, while simultaneously improve their cognition. The intervention yielded significant improvement in scores of HIV comprehensive knowledge, and HIV related nutrition knowledge and attitudes. The fact that a short three session training could make substantial changes suggest that an elaborated pedagogical approach with inquiry-based teaching strategy might be promising to improve the capacity of dietetic students providing care for HIV patients in the future.

Limitations

In the first study, due to limited resources, we did not extend our research to other dietetic schools. The three dietetic schools in this study are located in the Java Island, which in overall has better education and health system than the other parts of Indonesia. By limiting our study to these universities, we also limit the coverage of our study participants and thus subsequently

diminish the ability to generalize the results of the study. Additionally, considering the nature of the cross-sectional study, we were unable to make causative inferences upon our findings.

In the second study, our subjectivity and close personal contact with the participants provided a challenge to prove the trustworthiness of the analysis, although the use of multiple data collection methods has taken this matter into account. There is also a possibility both in the first and second studies for the participants to provide answers that are favorable to avoid judgment. However, the use of self-administered questionnaires in the first study and the close contact between participants and the researcher that established trust in the second study provide freedom for participants to give truthful responses to the queries.

Lastly, the third study possessed major limitation considering our training model was implemented on a pilot scale with limited resources, coverage, and workshops sessions, as well as short observational period. Hence, the true outcome and sustainability of the intervention might not be observed thoroughly. Nonetheless, the non-random intervention design of this should be acknowledged as a limitation to the internal validity of inferences.

Implication

Taken together, these studies showed that when presented with an elaborate training that allows them to gain information and encourage reflective thinking, students might be able to improve their knowledge and attitude towards PLHIV. Intervention should provide mental and intellectual challenges to trigger discussion over culturally sensitive. These studies potentially provide a foundation for future intervention. Given the relatively low levels of formal opportunity to learn about HIV and the indication that higher HIV knowledge is accompanied by better attitudes, integrating HIV training into the current dietetic curriculum is necessary.

Additionally, the fact that university affiliation consistently compound the model of explaining poor knowledge and attitude towards HIV, the current dietetic curriculum needs to be revisited, and lecturers' teaching conduct needs to be evaluated.

For future research, we recommend to scale up the coverage of the intervention and expand the training sessions. Future research should also consider adding more reflection exercises to trigger the adoption of better perspective towards PLHIV. Moreover, we suggest future research implement this intervention in the framework of professional continuing education for the currently practicing dietitians. Therefore, they can directly contribute to the improvement of the dietary quality of care provided to PLHIV.

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Appendix A - Institutional Review Board Approval Letter



University Research Compliance Office

TO: Tandalayo Kidd
Food, Nutrition, Dietetics, & Health
Justin Hall

Proposal Number: 8555

FROM: Rick Scheidt, Chair 
Committee on Research Involving Human Subjects

DATE: 11/29/2016

RE: Proposal Entitled, "Strengthening the competence of dietetics students on providing nutrition care for HIV patients"

The Committee on Research Involving Human Subjects / Institutional Review Board (IRB) for Kansas State University has reviewed the proposal identified above and has determined that it is EXEMPT from further IRB review. This exemption applies only to the proposal - as written - and currently on file with the IRB. Any change potentially affecting human subjects must be approved by the IRB prior to implementation and may disqualify the proposal from exemption.

Based upon information provided to the IRB, this activity is exempt under the criteria set forth in the Federal Policy for the Protection of Human Subjects, **45 CFR §46.101, paragraph b, category: #6, subsection:**

Certain research is exempt from the requirements of HHS/OHRP regulations. A determination that research is exempt does not imply that investigators have no ethical responsibilities to subjects in such research; it means only that the regulatory requirements related to IRB review, informed consent, and assurance of compliance do not apply to the research.

Any unanticipated problems involving risk to subjects or to others must be reported immediately to the Chair of the Committee on Research Involving Human Subjects, the University Research Compliance Office, and if the subjects are KSU students, to the Director of the Student Health Center.

Appendix B - Ethic Approval from Indonesian Institution



MEDICAL AND HEALTH RESEARCH ETHICS COMMITTEE (MHREC)
FACULTY OF MEDICINE GADJAH MADA UNIVERSITY
- DR. SARDJITO GENERAL HOSPITAL



ETHICS COMMITTEE APPROVAL

Ref : KE/FK/0129 /EC/2017

- Title of the Research Protocol : Upaya Peningkatan Kompetensi Mahasiswa Gizi dalam Penatalaksanaan Terapi Gizi Bagi Pasien HIV dan AIDS
- Documents Approved : 1. Study Protocol versi 02 2016
2. Information for Subjects versi 01 2016
3. Informed consent form versi 01 2016
- Principle Investigator : Mutiara Tirta Prabandari Lintang Kusuma, MIPH
- Participating Investigator(s) : 1. Apriliya Tri Hidayati, S.Gz
2. Nor Laila Febriana, S.Gz
- Date of Approval : **30 JAN 2017**
(Valid for one year beginning from the date of approval)
- Institution(s)/place(s) of research : 1. Program Studi S-1 Gizi Kesehatan Fakultas Kedokteran, Universitas Gadjah Mada
2. Program Studi S-1 Ilmu Gizi Universitas Respati Yogyakarta
3. Program Studi S-1 Ilmu Gizi Universitas Diponegoro

The Medical and Health Research Ethics Committee (MHREC) states that the above protocol meets the ethical principle outlined in the Declaration of Helsinki 2008 and therefore can be carried out.

The Medical and Health Research Ethics Committee (MHREC) has the right to monitor the research activities at any time.

The investigator(s) is/are obliged to submit:

- Progress report as a continuing review : Annually
 Report of any serious adverse events (SAE)
 Final report upon the completion of the study

Prof. Dr. Djoko Wahyono, SU., Apt
Vice Chairperson

dr. Endy Paryanto, MPH., Sp.A(K)
Secretary

Attachments:

- Continuing review submission form (AF 4.3.01-014.2013-03)
 Serious adverse events (SAE) report form (AF 6.1.01- 019.2013-03)

Recognized by Forum for Ethical Review Committees in Asia and the Western Pacific (FERCAP)
26-Jan-17

Appendix C - HIV Knowledge and Attitudes Questionnaire

Understanding the Determinants of HIV Knowledge, Attitudes and Stigma among Dietetics Students

Thank you for supporting our research by completing this questionnaire. We realize that your time is valuable and we appreciate your participation. The purpose of this research is to measure the extent of HIV knowledge, attitudes, and stigma among dietetics students as well as investigating the determinants. The procedures, which will involve you as a research subject, include completing the questionnaire that will take about 25-30 minutes of your time.

Participation in this research is anonymous. You may refuse to participate and you can quit at any time. If you quit or refuse to participate, the benefits or treatment to which you are entitled will not be affected. There is no foreseeable risk to the participants. You can freely respond to the questionnaire, as it bears no consequence on your academic standing or your future career.

Participation is voluntary, you have the option of skipping any questions you do not feel comfortable answering, and you can withdraw from the study at any time. You can contact the primary investigator, Dr. Tandalayo Kidd, through this email martan@k-state.edu or the graduate student in charge, Mutiara Kusuma, through this email mutiarakusuma@ksu.edu, if you have any questions about your participation.

Questionnaire I

Part 1: Sociodemographic information

Please answer these questions by filling up the blank area or give tick (√) on the answer

1.	Age (in years)	
2.	Gender	<input type="checkbox"/> Male <input type="checkbox"/> Female
3.	Class rank	<input type="checkbox"/> Junior <input type="checkbox"/> Senior
4.	Ethnicity	
5.	Religion	<input type="checkbox"/> Islam <input type="checkbox"/> Christian <input type="checkbox"/> Catholic <input type="checkbox"/> Hinduism <input type="checkbox"/> Buddhism <input type="checkbox"/> Confucianism <input type="checkbox"/> Other, specify _____
6.	How often do you attend religious activities?	<input type="checkbox"/> More than once a day <input type="checkbox"/> Once a day <input type="checkbox"/> More than once a week <input type="checkbox"/> Once a week <input type="checkbox"/> 1-3 times a month <input type="checkbox"/> Rarely <input type="checkbox"/> Never
7.	Marital status	<input type="checkbox"/> Married <input type="checkbox"/> Divorced <input type="checkbox"/> Widowed <input type="checkbox"/> Never married / single
8.	Place of origin (where you spend at least half of your formative years)	<input type="checkbox"/> Urban / city <input type="checkbox"/> Peri urban / suburban <input type="checkbox"/> Rural / countryside / village

Questionnaire II

Part 2: Exposure to HIV and People Living with HIV (PLHIV)

Please answer these questions by filling up the blank area or give tick (√) on the answer

1. In your personal life, do you know anyone living with HIV?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No

2. During your undergraduate program, have you had any life experience with anyone living with HIV?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No

3. During your undergraduate program, have you enrolled in a course specifically teaching about HIV?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No

If yes, please specify the name of the course.
What did you learn?

4. During your undergraduate program, have you attended any class, training, workshop, seminar, conference, or scientific activities related to HIV?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No

If yes, please specify the name and duration of the activities.
What did you learn?

5. Have you attended any HIV training in the following subjects (please tick all that apply)?	<input type="checkbox"/> Basics HIV and epidemiology
	<input type="checkbox"/> Stigma
	<input type="checkbox"/> Prevention and infection control
	<input type="checkbox"/> HIV and nutrition
	<input type="checkbox"/> Treatment
	<input type="checkbox"/> Policy and procedures
	<input type="checkbox"/> HIV counseling and testing
	<input type="checkbox"/> Prevention mother to child transmission
	<input type="checkbox"/> Vulnerable population (e.g. orphans)
	<input type="checkbox"/> HIV and disaster management
	<input type="checkbox"/> Human rights
	<input type="checkbox"/> None of the above
	<input type="checkbox"/> Others, please specify

6. Are you aware of any guidelines, protocol, or policies related to HIV in	<input type="checkbox"/> National HIV policy and guidelines
	<input type="checkbox"/> International HIV policy and guidelines (e.g.

the following subjects (please tick all that applies)?

WHO, UNAIDS)

- HIV counseling and testing
 - Confidentiality
 - Informed consent
 - Post exposure prophylaxis
 - Treatment
 - Blood safety
 - Universal precaution
 - HIV and nutrition
 - Prevention mother to child transmission
 - Infant feeding practices
 - Anti discrimination against people living with HIV (PLHIV)
 - None of the above
 - Others, please specify
-

Questionnaire III

Part 3: Access to Information and Social Media

Below are questions about your access to sources of information and social media. Think about each one and tick (√) the box that applies most to you.

Media	How often do you access these media?					On a typical day, about how many hours do you spend on these media?				
	Always	Often	Sometimes	Rarely	Never	0-1	2-3	4-5	6-7	>7
Television										
Radio										
Internet										
Magazine, posters, other printed media										
Facebook										
Twitter										
MySpace										
LinkedIn										

Questionnaire IV

Part 4: Cultural Value (Asian Values Scales)

Please think about each of these statements carefully since your response will not be judge as right and wrong. Then, tick (√) in the column that applies most to you with

No.	Statement	1	2	3	4	5	6	7
1.	Educational failure does not bring shame to the family.							
2.	One should not deviate from familial and social norms.							
3.	Children should not place their parents in retirement homes							
4.	One need not focus all energies on one's studies.							
5.	One should be discouraged from talking about one's accomplishments.							
6.	One should not be boastful							
7.	Younger persons should be able to confront their elders.							
8.	When one receives a gift, one should reciprocate with a gift of equal or greater value.							
9.	One need not follow one's family's and the society's norms.							
10.	One need not achieve academically in order to make one's parents proud.							
11.	One need not minimize or depreciate one's own achievements.							
12.	One should consider the needs of others before considering one's own needs.							
13.	Educational and career achievements need not be one's top priority.							
14.	One should think about one's group before oneself.							
15.	One should be able to question a person in an authority position.							
16.	Modesty is an important quality for a person.							
17.	One's achievements should be viewed as family's							

	achievements.								
18	Elders may not have more wisdom than younger persons								
19	One should avoid bringing displeasure to one's ancestors.								
20	One need not conform to one's family's and the society's expectations								
21	One should have sufficient inner resources to resolve emotional problems.								
22	Parental love should be implicitly understood and not openly expressed.								
23	The worst thing one can do is to bring disgrace to one's family reputation.								
24	One need not remain reserved and tranquil.								
25	The ability to control one's emotions is a sign of strength.								
26	One should be humble and modest.								
27	Family's reputation is not the primary social concern.								
28	One need not be able to resolve psychological problems on one's own.								
29	Following familial and social expectations are important.								
30	One should not inconvenience others.								
31	Occupational failure does not bring shame to the family.								
32	One need not follow the role expectations (gender, family hierarchy) of one's family.								
33	One should not make waves.								
34	Children need not take care of their parents when the parents become unable to take care of themselves.								
35	One need not control one's expression of emotions.								
36	One's family need not be the main source of trust and dependence								

Questionnaire V

Part 5: Religiosity (Beliefs and Values Scale)

Please think about each of these statements carefully since your response will not be judge as right and wrong. Then, tick in the column that applies most to you.

No	Statement	Strongly disagree	Dis-agree	Neither agree nor disagree	Agree	Strongly Agree
1.	I am a spiritual person					
2.	I believe I have a spirit or soul that can survive my death					
3.	I believe in a personal God					
4.	I believe meditation has value					
5.	I believe God is an all pervading presence					
6.	I believe what happens after I die is determined by how I have lived my life					
7.	I believe there are forces for evil in the Universe					
8.	Although I cannot always understand, I believe everything happens for a reason					
9.	I believe human physical contact can be a spiritual experience					
10.	I feel most at one with the world when surrounded by nature					
11.	I believe in life after death					
12.	I am a religious person					
13.	Religious ceremonies are important to me					
14.	I believe life is planned out for me					
15.	I believe God is a life force					
16.	At least once in my life, I have had an intense spiritual experience					
17.	I believe that there is a heaven					
18.	I believe the human spirit is immortal					
19.	I believe prayer has value					
20.	I believe there is a God					

Questionnaire VI

Part 6: HIV General Knowledge

For each statement, please give **only one** tick sign (√) to indicate your answer whether it is 'True' (T), 'False' (F), or 'I do not know' (DK). If you do not know, please do not guess; instead please tick 'DK'.

No.	Statement	T	F	DK
1.	HIV is a disease of immunity			
2.	AIDS is the virus that impair the individuals' immune system			
3.	People can get HIV through unprotected sexual contact with people living with HIV (PLHIV)			
4.	All pregnant women infected with HIV will have babies born with AIDS			
5.	People can get AIDS by being bitten by a mosquito that has bitten PLHIV			
6.	People can get HIV from sharing food and drinks with PLHIV			
7.	Health workers can get HIV through splashes of infected blood or body fluids onto the mucous membrane			
8.	Health workers can get HIV through needle stick injury in hospital			
9.	PLHIV always show symptoms of infection			
10.	Universal precautions are designed to protect health workers from clients who may be infected with HIV or hepatitis			
11.	Skin contact with HIV patients can transmit HIV			
12.	HIV cannot live outside human's body			
13.	Showering and washing after sexual contact keeps a person from getting HIV			
14.	Condom use can lower the risk of getting HIV			
15.	Spills of HIV infected material can be inactivated by simple disinfectant such as household bleach			
16.	Antiretroviral therapy is a cure for HIV			
17.	There is a vaccine that can stop adults from getting HIV			
18.	A person will not get HIV if he or she is taking vitamin and supplements			
19.	Withholding health services from PLHIV is violation of human rights			
20.	Voluntary and confidentiality are crucial in HIV testing			

Questionnaire VII

Part 7: HIV - Nutrition Knowledge

For each statement, please give **only one** tick sign (√) to indicate your answer whether it is 'True' (T), 'False' (F), or 'I do not know' (DK). If you do not know, please do not guess; instead please tick 'DK'.

No.	Statement	T	F	DK
1.	The main purpose of nutrition care process for PLHIV is to maintain the individuals' productivity and quality of life			
2.	Weight change is a good indicator of nutrition status of PLHIV			
3.	Calorie needs for PLHIV remain the same throughout the disease progression			
4.	Vitamin B12 deficiency and decrease lean body mass can occur during the asymptomatic HIV stage			
5.	Nutrition counseling is as important as dietary treatment on maintaining patients' quality of life			
6.	There is a possibility of drugs and nutrient interaction, thus HIV patients need to take their medication before meal			
7.	Physical activity is not included in the pillar of HIV treatment			
8.	To deal with appetite loss, dietitian can only rely on appetite booster supplement			
9.	Dietitian needs to give more suggestion and recommendation to the patient than listening to them during counseling because nutrition care for PLHIV is very complicated			
10.	When client show behavioral complication during counseling such as depression, violence, suicide tendency or worsening medical condition, dietitian should remain silent to protect the confidentiality			
11.	Since dietitian has learned health and medical science, he or she must not have prejudice to PLHIV			
12.	Malnutrition among PLHIV is caused by multiple factors such as loss of appetite, malabsorption, metabolic stress, and infection			
13.	Since HIV patients are at high risk of malnutrition, there is no restriction in diet and how it prepared			
14.	Anthropometric measurements and laboratory assessment are adequate to monitor the disease progression and outcome of nutrition care			
15.	HIV positive mother should breastfed their baby since breast milk contains immune factors			

Questionnaire VIII

Part 8: HIV Attitudes and Stigma

For each statement, please give **only one** tick sign (√) to indicate your answer and level of agreement with the statement

Statement	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
<i>I believe</i>					
I believe that people who are infected with HIV should be treated in different areas from other patients in order to protect the larger population from infection.					
I believe that people infected with HIV are responsible for getting the disease					
I believe that HIV-positive patients are the biggest threat to my safety at my future place of work					
I believe that a person infected by HIV because of his/her lack of self control					
<i>I feel</i>					
I feel that providing nutrition care to people infected with HIV is a waste of resources since they are going to die soon anyway.					
I feel that I am at high risk of becoming infected with HIV if I work in a health facility.					
I feel that HIV patients who contracted the disease from injecting drugs have less right to access the highest quality of nutrition care in my facility.					

I feel that HIV is a critical medical problem and nutrition care is a mere supportive care					
<i>I think I will be comfortable</i>					
I think I will be comfortable providing nutrition care to clients who are HIV-positive					
I think I will be comfortable performing nutrition counseling on clients whose HIV status is unknown.					
I think I will be comfortable sharing the bathroom with a colleague who is infected with HIV					
I think I will be comfortable if my family member who has HIV being treated in other health facility					
<i>I will avoid</i>					
I will avoid touching clients for fear of becoming infected with HIV					
I will avoid talking about the HIV status of my patient to other health professionals who do not work with the him or her					
I will avoid performing any task at work without wearing latex gloves					
I will avoid asking my HIV patients who they got the disease					

Appendix D - Samples of the HIV and Nutrition Training Modules:

Participants' Workbook Session 1

PURPOSE

This session provides dietetics students with basic information about HIV and its relation to nutrition and nutrition counseling.

SESSION OBJECTIVES

By the end of the session, the participants will be able to communicate the following to others:

1. How HIV is transmitted;
2. How HIV can be prevented;
3. How HIV disease progresses;
4. How HIV treatment work;
5. How HIV and nutrition are interrelated with each other;
6. How dietary intervention contribute to HIV treatment;
7. How nutrition counseling contribute to HIV treatment.

TIME TO COMPLETE MODULE

100 minutes

MATERIALS PROVIDED

Direktorat Bina Gizi Masyarakat, Kementerian Kesehatan RI. 2010. Pedoman Pelayanan Gizi Bagi ODHA (Dietary Guidelines for PLHIV) *Chapter 1-3*.

TOPICS

1. Definition and epidemiology
 - a. HIV and how it differs from AIDS
 - b. Epidemiology, magnitude, and trends of HIV and AIDS
2. HIV transmission route
 - a. Sexual contact
 - b. Transmission in clinical setting

- c. Needle sharing
- d. Transmission from mother to child.
3. Social determinants of HIV
4. HIV preventative measures and universal precautions
5. HIV disease progression, WHO clinical staging, and opportunistic infection
6. The relation of HIV and nutrition
 - a. Nutrition implication of HIV
 - b. The role of dietitians in HIV treatment
7. Clinical management of HIV, medications and adherence
8. Medical nutrition therapy for HIV and AIDS
 - a. Nutrition care process for HIV case
 - b. Food and drugs interaction
9. Nutrition counseling for PLHIV
10. Evidences related to HIV and nutrition

SESSION ACTIVITIES

1. Introduction (10 minutes)

Participant will be introduced to the session, which includes the importance of the topic, learning objectives, and class activities.
2. Pre-course questionnaire (20 minutes)

Participant will be asked to complete a set of HIV knowledge and attitude questionnaire in class.
3. Small participatory lecture (30 minutes)

Participant will listen to a short lecture related to HIV and AIDS
4. Case study (20 minutes)

Participant will be introduced a case study on nutrition care process (NCP) for an HIV case. Participant will be asked to:

 - Implement nutrition assessment, diagnosis, intervention, monitoring and evaluation
 - Discuss nutrition counseling plan for the patient

The plan of care can be written the space provided in the following page.
5. Discussion, question and answers (10 minutes)

Participants are expected to discuss the lecture, ask questions, make opinions, and share insights with others.

6. Reflective exercise and conclusion (10 minutes)

Participants will be asked to reflect on the first training and shared their reflection.

RECOMMENDED READING

1. Congdon, M., Gjelsvik, A., Lurie, M. N., Enimil, A., Antwi, S., & Kwara, A. (2015). The Role of Nutritional Status on Follow-up among HIV-infected Children at a Teaching Hospital Clinic in Ghana. *West Afr J Med*, 34(1), 20-26.
2. de Pee, S., & Semba, R. D. (2010). Role of nutrition in HIV infection: review of evidence for more effective programming in resource-limited settings. *Food Nutr Bull*, 31(4), S313-344.
3. Direktorat Bina Gizi Masyarakat, Kementerian Kesehatan RI. 2010. *Pedoman Pelayanan Gizi Bagi ODHA (Dietary Care for PLHIV)*.
4. Escott-Stump, Sylvia. 2015. *Nutrition and Diagnosis- Related Care 8th*. Edition. Philadelphia: Wolters Kluwer.
5. Pribram, Vivian. 2010. *Nutrition and HIV*. West Sussex: Blackwell Publishing Ltd.

Mr. Sommer's Plan of Care – Nutrition Care Process

Nutrition assessment

Nutrition diagnosis

Nutrition intervention

Monitoring and evaluation

Nutrition counseling
